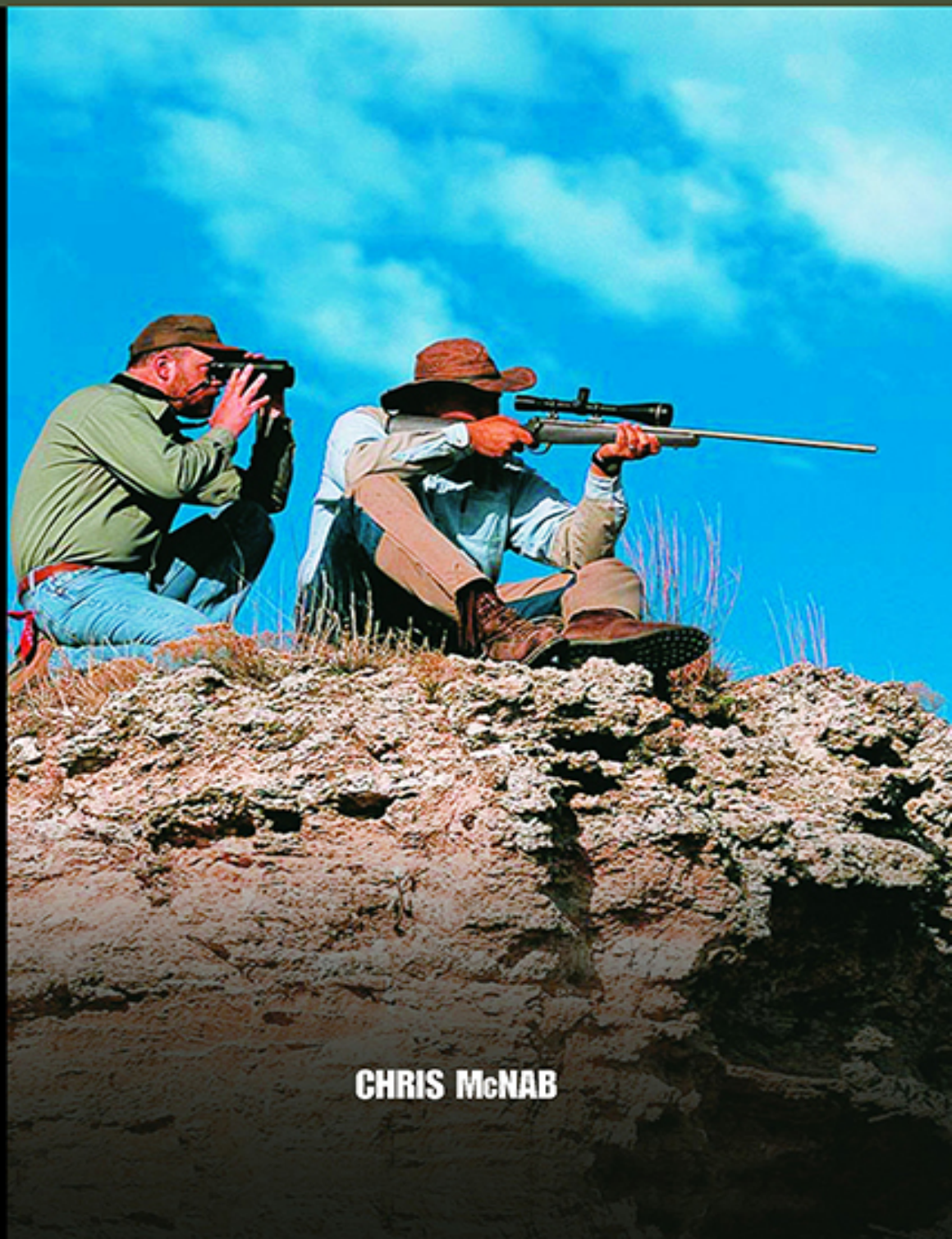


SAS AND ELITE FORCES GUIDE HUNTING

ESSENTIAL HUNTING AND SURVIVAL SKILLS
FROM THE WORLD'S ELITE FORCES



Hunting, tracking,
trapping, snares,
hides, and
camouflage

CHRIS McNAB

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INTRODUCTION

Hunting means many different things to many different people. For some it's about spending time in nature, observing wildlife as much as hunting it. For others, it's about testing their skills in tracking and stalking. In some cases, however, hunting can be a matter of physical survival.

There are many misconceptions about hunting in the mind of the general public. Partly these misconceptions are spread by the clash between the pro- and anti-hunting lobbies, in arguments where misinformation thrives alongside passionate emotions (on both sides). There are also generalizations about the practice of hunting. Those who have not tried the activity, for example, often have the idea that the advantage of firearms always stacks in favour of the hunter, and that the animal is largely helpless prey.

Anyone who has ventured into the field with a gun knows that this last viewpoint is frequently well short of reality. When the author first started hunting in his early 20s (relatively late compared to many young hunters), he was stunned at just how perceptive and wily wild animals could be. It quickly became apparent that these were not the gregarious creatures of the town or city, but wary animals with superb senses, used to being on the lookout for mortal threats. Walk across a farmyard with a stick, and the crows and pigeons would look down on you with studied interest. Try to do the same thing with a gun and the birds would be nowhere to be seen. Hours might be spent studying promising rabbiting territory, but the outcome of the day might be nothing more than aching limbs from a long and arduous walk.

The fact is that wild creatures have sensory abilities that far surpass our own meagre powers of sight, smell and hearing. Stand upwind of a deer, for example, and within seconds the animal's head will twitch up, sniffing the air, before it quickly moves away into more concealing terrain. Hunting, therefore, is a true competition, in which modern firearms only partly iron out the tremendous natural advantages the prey possesses at the outset.

For this reason alone, if you are going to practise hunting, always respect your prey. Yet even more than that, you should honour your kills for the very fact that you take a creature's life to put food on your table. In the author's view, ethical hunting is paramount if legislation isn't to kill off the pastime. I believe that there are only three reasons to kill an animal: 1) for food; 2) for legitimate pest control; and 3) to put a

creature out of its suffering. Under no circumstances do I believe it is acceptable to kill an animal for mere entertainment, simply to watch it die. Such an attitude reflects badly on all hunters as well as on the individual concerned.

Therefore, hunters need to be ethical on many levels. We should only take what the habitat or species can sustain, so as not to disturb the fundamental natural balance. We should conserve as much as we hunt, obeying the laws about protecting the countryside and helping wildlife to thrive. From a legal standpoint, we should also conform to all national, state and regional legislation on hunting, even if we think it unwarranted. Only by holding our hunting to high standards will it bear the pressure of scrutiny from those who oppose it.

Winter Conditions

Many of the principles employed by military snipers can be adapted or utilized in hunting. This sniper has camouflaged his rifle by draping a white piece of fabric over the barrel, which also has the effect of protecting the weapon from the winter conditions.



High-powered Rifles

A soldier prepares to take a shot with a high-powered sniper rifle. In both sniping and hunting, long-range shooting is an extremely exacting challenge, requiring excellent physical control and a detailed understanding of the principles of ballistics.



Safe Hunting

This book is about the principles, practice and weapons of hunting. Not only does it bring in the best of civilian thinking on the subject, it also incorporates military advice about hunting and surviving in the wild. The military perspective can be an illuminating one. Soldiers are not only hunters (of other soldiers), but when the situation is reversed, they can also be the hunted. This makes them a unique breed, highly aware of their surroundings and issues such as camouflage and concealment, all of which are applicable to animal hunting. Military survival training has a further relevance to the hunter, who might find himself in potentially dangerous landscapes under adverse weather conditions.

The military also trains its soldiers in the safe handling of firearms (safe, that is, unless you are the enemy). Here we must be emphatic about the issue of safety in hunting. Every year, in every country, hunters are killed through careless mistakes, either their own or those of others. Modern firearms and hunting bows are extremely powerful weapons, and a moment's lapse in safety procedures can have terrible consequences. Therefore, the following points of safety need to be established at the outset:

Carry Gear

When out on a hunting expedition in the wilderness, military-style packs can be an excellent option for carrying essential supplies and ammunition. Pack the frequent-use items, such as waterproofs and snacks, in the top sections and pockets of the packs.



- Always treat a firearm as if it is loaded – never point the muzzle at anything you are not prepared to shoot.
- When hunting in groups, be aware of others at all times, especially if you are swinging your gun to shoot moving prey. Leave a broad margin of error between the point at which you take the shot and other people in the vicinity.
- Make sure when shooting at prey that the bullet has a safe, proximate backdrop in case you miss or the bullet overpenetrates. Bullets can fly for hundreds of metres if they are not stopped quickly, endangering distant people and wildlife.
- Know how to handle your firearm, inside and out. This not only includes the correct, safe operating method, but also knowing how to strip and clean the gun. Always remember: a well-maintained weapon is a safer weapon.
- If you have had to put a gun down on the floor, check that the muzzle is clear of obstructions before firing it again.
- Take special care in handling a firearm when climbing over fences, gates, tree trunks and rough terrain. Be aware of muzzle direction at all times, and if the obstacle can't be crossed easily make the gun safe (by breaking the barrel of a shotgun or opening the bolt of a rifle, for example) before attempting to do so.
- Make sure that you have the correct ammunition for your firearm. Don't mix ammunition types in the same bag or pocket.

Modern Ghillie Suit

A ghillie suit turns a sniper, and a hunter, into a shapeless mass that is not readily identifiable as a human being. This is pointless if the rifle is not camouflaged, however; a bush armed with a rifle will soon be recognized for what it really is.



By following such rules without exception, you can ensure that the hunting experience stays both safe and satisfying.

Modern Hunting

Modern hunters can take advantage of a huge range of accessories. The challenge of moving a deer carcass is made far more manageable by an off-road hunting buggy; and some of these vehicles even have amphibious capabilities.



1

The weapons used for hunting are extraordinarily diverse. They range from the most primitive devices, such as slingshots and bows, through to modern hunting rifles with sophisticated optical sights.

Weapons

In hunting, the most important considerations are to choose the right weapon for your intended prey, to know how to use that weapon fluently and maintain it in good condition. Selecting the right weapon for hunting can be a complicated process, not least because different types of weapon are suited to different types of prey. To take an obvious example, a .22 airgun would serve as a useful hunting weapon for small game up to the size of a rabbit, depending upon the model and the sight options. Use the same weapon against a fox, however, and the likely result is a wounded animal running off into the wilderness. Take on a bear with an air rifle and you run the risk of being killed by a creature that has received nothing more than an irritating localized skin wound. Conversely, a .338 Win Mag rifle will comfortably bring down a large deer or bear if the shot placement is accurate, but it will obliterate many smaller game, rendering them useless for eating.

Remember that in hunting your objective is not simply to kill an animal cleanly, but also to kill it cleanly and leave it in a fit state for consumption. The author remembers early forays into the field rabbiting with a 12-gauge shotgun. While the gun did indeed prove fit for the job, some sobering close-range shots resulted in little more than a bloody mess rather than a tasty meal. The lesson learnt by many hunters is that not only should you choose the right weapon for the job, but you should also become familiar with the performance characteristics of that weapon across its range spectrum, and adjust your hunting technique accordingly.

Steady Shot

A monopod – purpose-designed or improvised – can provide a useful frontal support for a rifle when taking a standing shot. Ensure the monopod is set on firm, non-slip ground.



Basic Hunting Weapons

Most of us identify hunting weapons with firearms, and indeed sporting guns will form a large part of the focus of this chapter. Yet there are many other types of weapon that can be used in hunting (depending on local or national restrictions) that are far less advanced but which can still do a respectable job of bringing down prey. Some of these can even be constructed with basic tools and pressed into service in a survival situation.

For small birds and game up to the size of rabbits, squirrels and similar mammals, a slingshot or catapult (as it is more commonly known in the UK) is one convenient and near noiseless hunting weapon. A basic catapult can be bought from a fishing or hunting supplier, and the cheapest models will be within almost everyone's budget. Mass-produced slingshots are light in weight, feature resilient plastic handles and have efficient rubber thrust bands with exceptional elasticity. Using the correct ammunition (either small, round stones or purpose-designed BB pellets), even the most basic slingshot will have a practical range of 10–20m (32–65ft). However, the more powerful variants feature wrist supports, stabilizers (to ensure a consistent and stable grip), sights (ranging from simple open 'iron' sights through to optical and even laser scopes) and a draw distance from the front grip hand to the opposite side of the chest.

Slings

A slingshot can, with practice, hit and kill suitable prey at distances of 30m (100ft) and more. Choose varieties fitted with thrust bands made from surgical tubing, as this type of band is the most reliable and powerful. Steel ball ammunition is available in a

variety of calibres, ranging from 6.4mm (0.25in) for very small birds and animals, right up to 12.7mm (0.5in) for rabbits, squirrels, etc. Smaller ammunition will have a higher initial launch velocity, but will slow more quickly as it meets air resistance, whereas the heavier ammunition will fly further and truer. A good mid-weight, multi-purpose ball size is 9.7mm (0.38in).

Legal Hunting

Many countries and local governments enforce strict restrictions on what weapons can be used for hunting animals, particularly larger ones such as deer, elk and bear. Often, these restrictions relate to calibre and muzzle velocity, ensuring that the weapon has enough power to deliver a clean kill against a sizeable creature. You need to comply with these restrictions to the letter, as contraventions could result in your firearms being confiscated or even criminal charges being filed against you. You might also be required to obtain licences for hunting. You should also check that your ammunition type is authorized. For example, in the UK it is illegal to hunt wildfowl with lead shot – only steel shot is accepted. Law enforcement or relevant government agencies will usually provide you with documentation concerning all hunting restrictions, so read it through carefully before heading out into the field.

Note that you can make a simple slingshot yourself using a forked branch (hazel wood is ideal for this component) and an elastic material, fitted with a pouch in the centre to take the projectile. You can use regular clothing elastic for the thrust band, although this tends to deliver limited power and quickly loses its elasticity when overstretched. As mentioned it is far better to use a piece of surgical rubber tubing, if available, or the rubber from a tyre inner tube. Whatever device you have, practise regularly with it, increasing your accurate range steadily and getting used to judging the rise and fall of the ball in flight.

Slingshot

The slingshot is a classic and very ancient hunting weapon. Select small, smooth stones about 2–3cm (0.8–1.1in) across as ammunition.



Catapult

This modern catapult features a sight (the two graduated prongs extending inwards from the catapult arms) and stabilizers to balance the weapon in the hand.

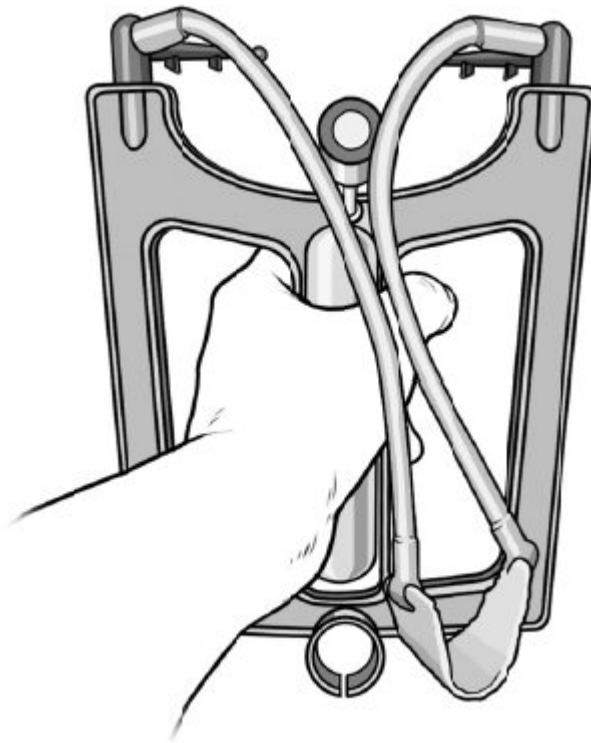


Bow and Arrow

At the more advanced end of tension-powered weaponry is the bow and arrow. It is worth remembering that the bow and arrow was mankind's premier hunting weapon for thousands of years, as well as a weapon of war, and is to be respected as such. Indeed, bow hunting remains a popular sport in North America and elsewhere, with the most capable bows able to kill prey as large as bear and elk.

Ergonomic Design

This advanced catapult utilizes a plastic frame in a innovative way. The aperture at the bottom is used to take a flashlight, making night hunting possible.



As with slingshots, professional man-made bows are your best weapons for hunting. When selecting a hunting bow, there are two primary decisions to be made. The first is whether you opt for a short bow or a long bow. A short bow is generally regarded as being under 1.65m (5ft 5in) in length, although more realistically they are about 0.9m (3ft) long. The advantage of a short bow is its portability and its short draw length, making it compact to lug about the field and quick to use on a target of opportunity. Moreover, the dimensions mean that a short bow is convenient to use

from confined spaces, such as a hide. The disadvantages of the short bow can be a very heavy pull to get to full draw length, and a limited range – the shorter draw length means that there is less kinetic energy stored up in the bow before release.

US Army Tip: Simple Hunting Weapons

Rabbit stick – one of the simplest and most effective killing devices is a stout stick as long as your arm, from fingertip to shoulder, called a ‘rabbit stick’. You can throw it either overhand or sidearm and with considerable force. It is best thrown so that it flies sideways, increasing the chance of hitting the target. It is very effective against small game that stops and freezes as a defence.

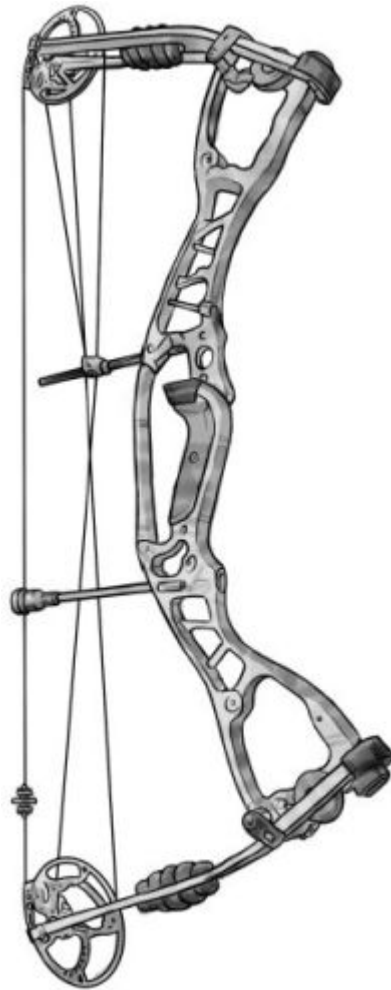
Sling – you can make a sling by tying two pieces of cordage, each about 60cm (24in) long, at opposite ends of a palm-sized piece of leather or cloth. Place a rock in the cloth and wrap one cord around your middle finger and hold in your palm. Hold the other cord between your forefinger and thumb. To launch the rock, spin the sling several times in a circle and release the cord between your thumb and forefinger. Practice to gain proficiency. The sling is very effective against small game.

Long bows, by contrast, are more unwieldy (especially if you are intending to hunt in thick bush) but have better range (and accuracy over distance). They also have an easier draw. Note, however, that short bows are better for rapid shooting, as less time is spent drawing back the bowstring. The important point is that the right bow for you not only depends on your hunting requirements, but also on your physical limitations. For this reason, purchase a bow from a reputable bow supplier who will fit you with a bow ideally suited to your height, strength and body shape.

Once you have decided on a short bow or long bow, the next major choice is recurve or compound. The recurve bow shape is the traditional bow format – the tips of the bow curve away from the shooter and the bow is fitted with a single bowstring. Recurve bows can be both accurate and powerful, delivering ranges in excess of 100m (328ft), but the tension in the bow string and the physical strength required to draw the bow convincingly means that they require considerable practice to master. The compound bow, by contrast, is fitted with a system of pulleys to ease the draw weight, but retain maximum kinetic energy in the bow arms.

Compound Bow

Compound bows use a system of pulleys to assist the user in drawing the weapon. Consequently, they can have heavy, but manageable, pull weights.



Hence, a person might only be able to draw a 14kg (30lb) recurve bow, but using a compound bow, they would be able to draw twice that figure. Compound bows also have adjustable draw lengths, so the bow can be configured precisely to your body. On the downside, modern compound bows are sophisticated devices, meaning that they are more susceptible to damage or malfunction if knocked about in the field.

Bow Basics

Space here does not allow for comprehensive instruction on bow shooting technique – this should be gained under expert instruction and through regular practice. There are a few points that are generally useful, however. Always make sure that the arrow is fully nocked on the string before you release – listen for the click as the arrow slots

onto the string. Adopt a stable position for shooting, with your feet shoulder-width apart and your weight evenly balanced. Use your shoulders, not just your arms, to draw the bow to its full extent, and fix your eyes on the target – the harder you stare at the target, the better your brain will be able to perform the natural calculations and adjustments required to hit it.

Release the string smoothly, avoiding the jerking motions that will knock you off aim. For compound bows, invest in a mechanical release device, which releases the string by pressing a button. Also make sure that you have good-quality arrows with a shaft length that is suited to your length of pull. A basic rule is to hold an arrow as if you are drawing a bow back to your cheek; if about 2.5cm (1in) of arrow sits ahead of your front hand, then the arrow is of the right length.

For hunting, there are various types of tip for your arrow. A basic spiked field point will suffice for small game, but for larger creatures you should opt for a broadhead with two or three razor-like blades to optimize blood loss in the animal. You can also buy specialized heads for fish hunting.

The bow and arrow has many advantages for hunting. It is silent, very effective over a few hundred metres (in proficient hands, of course) and its ammunition is re-usable (if retrieved). Yet the skill taken to master a bow in a hunting context can be considerable, and the dangers of an ineffective shot on a large animal are serious.

Traditional Bow

Although compound bows are visually striking, traditional self bows are not to be disregarded as hunting weapons. They are durable, simple to maintain, and can provide accurate killing power over ranges of up to 50m (164ft).



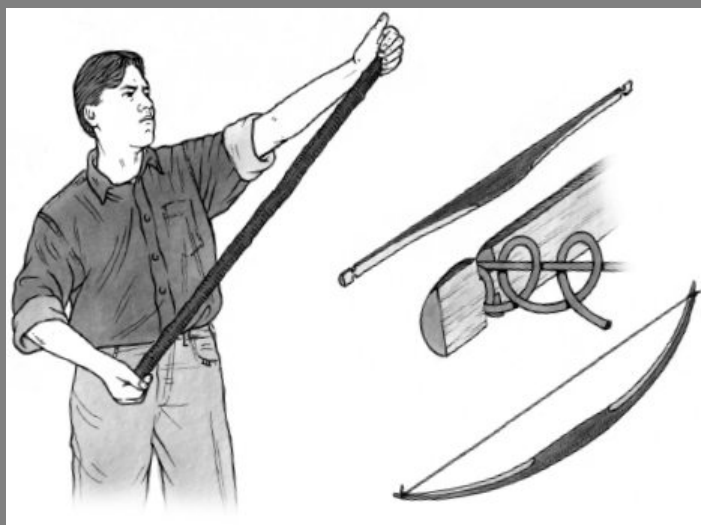
US Army Tip: Making a Bow and Arrow

A good bow is the result of many hours of work. You can construct a suitable short-term bow fairly easily. When it loses its spring or breaks, you can replace it. Select a hardwood stick about 1 m (3ft 3in) long that is free of knots or limbs. Carefully scrape the large end down until it has the same pull as the small end. Careful examination will show the natural curve of the stick. Always scrape from the side that faces you, or the bow will break the first time you pull it. Dead, dry wood is preferable to green wood. To increase the pull, lash a second bow to the first, front to front, forming an 'X' when viewed from the side. Attach the tips of the bows with cordage and only use a bowstring on one bow.

Select your arrows from the straightest dry sticks available. The arrows should be about half as long as the bow. Scrape each shaft smooth all around. You will probably have to straighten the shaft. You can bend an arrow straight by heating

the shaft over hot coals, but do not allow it to scorch or burn. Hold the shaft straight until it cools. You can make arrowheads from bone, glass, metal or pieces of rock. You can also sharpen and fire-harden the end of the shaft. You must notch the ends of the arrows for the bowstring. Cut or file the notch; do not split it. Fletching (adding feathers to the notched end of an arrow) improves the its flight characteristics, but is not necessary on a field-expedient arrow.

Constructing a bow takes practice and a high-quality piece of wood. Suitable woods for making a bow include yew, red oak and osage. Select a piece of wood without any weak points, such as prominent knots. As in the diagram here, ensure that the bow string is fitted securely to the tips of the bow.



Crossbow

Crossbows require far less training than longbows for use as hunting weapons, and modern varieties can be fitted with optical sights.



Crossbow Hunting

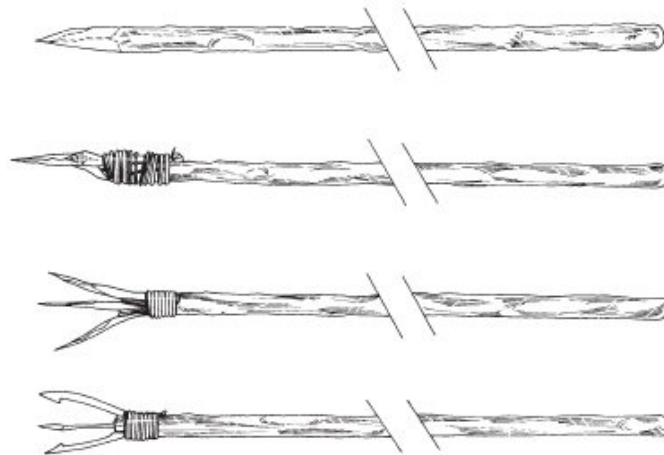
Crossbows are an alternative to the bow and arrow, and are typically easier to master as they are held rather like a firearm and, once cocked, require little physical control to aim and release. Furthermore, modern crossbows are also available with optical sights, meaning that precise aim can be taken on the target animal. Like bows, they are available in recurve and compound varieties, with similar implications for draw weight. This is a significant issue, as a major downside of many crossbows is the intense physical strength required to load one. The compound crossbow design allows enormous draw weights of up to and even beyond 91kg (200lb), which can throw a bolt several hundred metres with powerful penetration. Made from composite materials, these weapons can be light and convenient, and there is no denying their power. (In medieval times, a crossbow bolt could be capable of penetrating a knight's plate armour.)

Other Field Expedient Weapons

There are many other weapons you can improvise in the field, should you need to. Spears, for example, can be made for either throwing or stabbing, and can be as simple as a hardwood pole or branch sharpened at one end with the point hardened over a fire. A decent spear should be in the region of 1.8m (6ft) long, the length giving you some protective distance from your prey. You can make more durable and lethal points by partially splitting the shaft at one end and inserting a piece of sharp metal or bone in the split before lashing it securely into place. (Put lashings beneath the split as well, to prevent it working down the shaft.) When throwing a spear, put your full body weight into the cast and follow right through with the throwing arm, keeping your eyes focused hard on your target. When stabbing, lean into the thrust to supply weight and power, but not so far forward that you will fall if the spear snaps.

Spearheads

Here is a variety of improvised spearheads, made from materials such as metal, glass, thorns and hooks.



Throwing a Spear

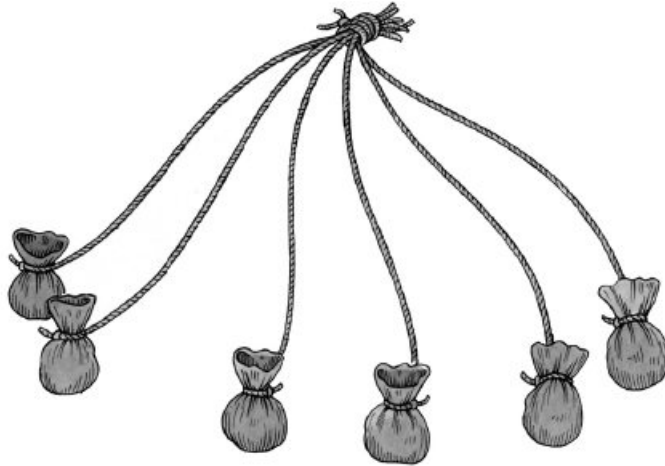
The spear-thrower device used here imparts a greater leverage to the missile at point of release, dramatically increasing range and power.



Working on a very different principle, the bola is a traditional weapon used to kill flying birds or bring down running animals. Take three to six stones, each about 5cm (2in) in diameter, and wrap them in individual pouches of material. Then tie each pouch to a piece of string about 1m (3ft 3in) long. Gather all the ends of the strings and knot them together very firmly – this point is where you grip the missile to throw it. To launch, swing it above your head for several revolutions before throwing it at your prey – keeping your eyes locked on the target at all times will help to improve the accuracy of the throw. A good bola will wrap itself around the prey, while the stones will stun or kill it.

Improved Bolas

Here, the bolas weights consist of stones bound up tightly in small cloth bags.



Knives

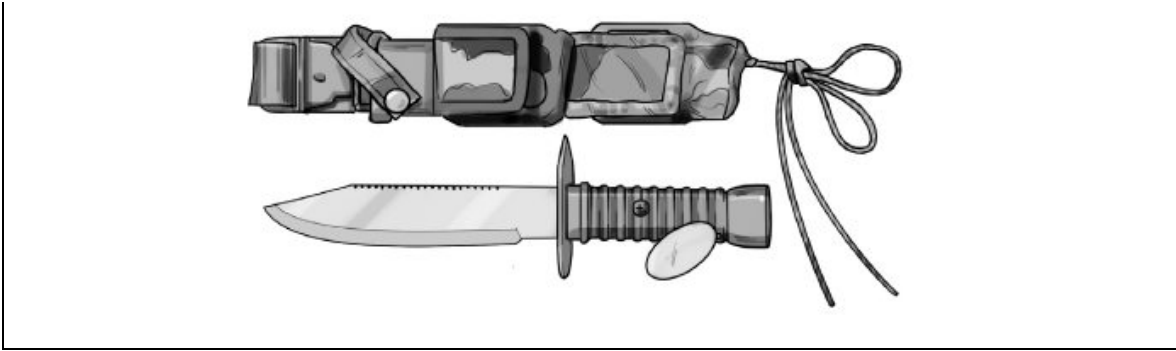
Stone knives have practical applications, not only for dispatching wounded animals but also for butchering them afterwards. The US Army's official survival manual gives the following instructions for making a stone blade:

To make a stone knife, you will need a sharp-edged piece of stone, a chipping tool and a flaking tool. A chipping tool is light and blunt-edged, used to break off small pieces of stone. A flaking tool is a pointed tool used to break off thin, flattened pieces of stone. You can make a chipping tool from wood, bone or metal, and a flaking tool from bone, antler tines or soft iron. Start making the knife by roughing out the desired shape on your sharp piece of stone, using the chipping tool. Try to make the knife fairly thin. Then, using the flaking tool, press it against the edges. This action will cause flakes to come off the opposite side of the edge, leaving a razor sharp edge. Use the flaking tool along the entire length of the edge you need to sharpen. Eventually, you will have a very sharp cutting edge that you can use as a knife. Lash the blade to some type of hilt.

– FM 3-05.70, *Survival*

Hunting Knife

A good hunting knife is an essential field tool. Keep it clean and free from rust, and sharpen it regularly, particularly after cutting bone or wood.



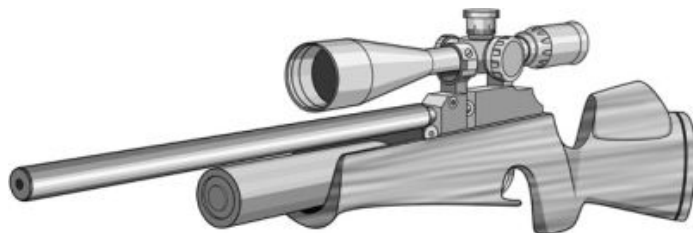
A stone blade has natural limitations and is obviously inferior to a high-quality hunting knife. For small-game skinning and dispatch, a small but strong lock knife with a blade a few centimetres long can suffice. A good, general-purpose hunting knife, however, should have a blade up to 10cm (4in) long and a solid antler or hardwood grip that fits comfortably in the hand. A bevel edge makes the knife good for carving actions, and the non-cutting edge – the knife's spine – should be wide enough to apply pressure with the hand.

Guns and Air Rifles

Firearms form the most important section of this chapter by virtue of the fact that centuries of weapons evolution have made them into the near-perfect hunting tools. A good firearm enables a person to drop even large prey at safe distances, often without the animal realizing that it is being hunted in the first place. As long as the firearm is firing the right ammunition, and the shot is put in the correct place, the animal should be killed efficiently and quickly.

Pre-charged air rifle

This pre-charged air rifle shows state-of-the-art design. The gas cylinder beneath the free-floating barrel provides consistent power delivery and a multi-shot magazine allows for shots at multiple targets. The stock is contoured for a precise fit to the cheek.



The question of the correct firearm and ammunition to choose for hunting is an enormous one, the subject of entire printed volumes and one that provokes much heated debate. For this reason, it is advised that anyone wanting to purchase a firearm for a specific hunting purpose should take expert advice from a good gun supplier, who will present the latest options and models available. Here we will walk through the essential categories of hunting firearm, noting the advantages and disadvantages of each, and giving some basic advice concerning weapon choice.

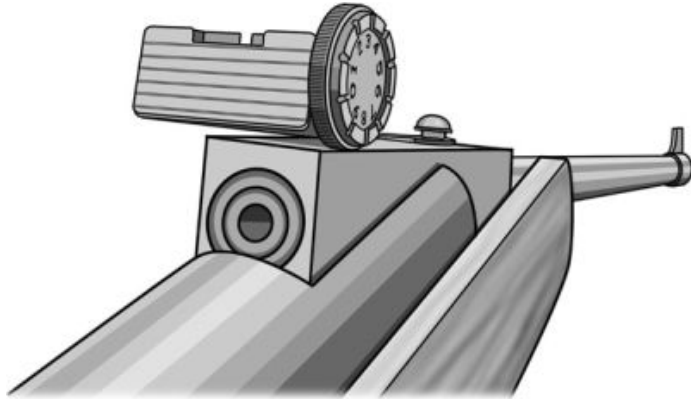
Airguns

Airguns are the most easily accessible of hunting firearms. Even in countries with very restrictive firearms licensing regulations, such as the UK, airguns are usually available to purchase without any legal restriction by an adult. (In some countries, if air weapons exceed a certain level of power and muzzle velocity, they might fall within restrictions placed upon powder firearms – check government statutes for details.)

Air pistols, contrary to what anyone might say, should never be used for hunting purposes, as they have neither the power nor the accuracy for the job. Air rifles, by contrast, are well suited to hunting small or medium-sized birds and game. The most common calibres are .177 and .22, and there are pros and cons to each. The .22 – the most popular in a hunting context – has a greater surface area and so imparts a better impact on the target. The lighter .177, by contrast, delivers less punch but achieves higher muzzle velocities for the same power, and so delivers a flatter trajectory and greater accuracy. As a general rule, the .177 is fine for small birds and pest control, but the .22 should be used for rabbiting and on other similar-sized game.

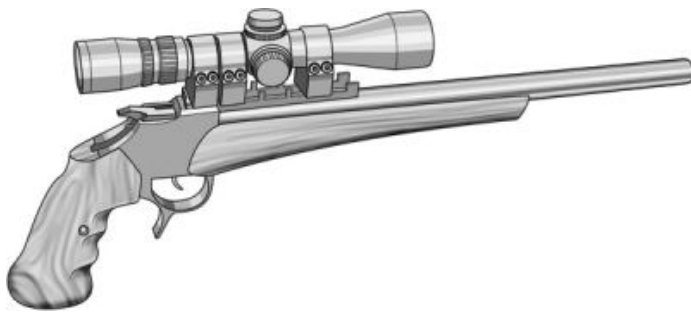
Spring Gun

Here is the classic break-barrel air rifle design, the rear of the barrel visible beneath the simple adjustable rear sight above. Don't over-oil the pellet aperture – just a thin film around the moving parts will suffice.



Hunting Handgun

This single-shot hunting handgun uses a robust falling-block action to take the heavy cartridges required for taking on large prey.



Note that all air rifles have range limitations, however, by virtue of the low mass of an air pellet. A typical air rifle will have an effective range of 30–50m (98–165ft), with the most powerful models exceeding 100m (328ft). Make sure you are using appropriate hunting pellets – standard flat- or dome-headed target pellets will be fine for small creatures like rats, but for rabbits and larger birds, choose pointed-tip pellets with better penetration. (Put padding in your pellet tin, as damaged points will adversely affect the efficient flight of the pellets.)

When it comes to choosing an air rifle, the range of options is vast. You can make a useful subdivision into hand-cocked rifles or pre-charged rifles. Hand-cocked rifles are, as their name suggests, weapons that require manually cocking before a pellet can be fired. This action is typically performed by either ‘breaking’ the entire barrel downwards, at the point where the barrel meets the action, or by charging a level running alongside or underneath the barrel.

In both actions the procedure cocks a spring-loaded piston in a compression chamber. Pulling the trigger releases the piston, compressing the air behind the pellet (loaded into the bore port at the end of the barrel); the air pressure builds up to the extent that the pellet overcomes its inertia in the bore chamber and is forced explosively down the barrel to begin its flight.

Spring Guns

The advantage of 'break-barrel' weapons is that they are typically rather inexpensive compared to other types of air rifle, but they are also robust and reliable, as numerous generations of schoolchildren have discovered in their back gardens. They deliver serviceable accuracy, but the fact that the barrel is movable compromises accuracy over long ranges. Side- or under-barrel lever guns get around this problem by having a fixed barrel, the cocking performed by a separate mechanism. These air rifles, especially in their more expensive incarnations, are very good hunting weapons, although in their heart they are still 'spring guns'. Disadvantages of such firearms are that the shifting mass of the compression piston can affect accuracy at the point of firing, and the 'lock time' (the interval between pulling the trigger and the pellet being fired) can also be longer than desirable, again with a negative impact on accuracy. Spring guns tend to be on the noisier side of air rifle volume, and the cocking action might be a problem if a hunter wants to remain inconspicuous while reloading for another shot.

The term 'pre-charged' is actually shorthand for a range of air rifles, the details of which are too technical to go into at any length here. In essence, however, these air rifles store gas (CO₂) or air in a cylinder, filled prior to using the weapon. The cylinder contains enough gas for multiple shots – up to 500 in advanced models – and once the cylinder is expended, it needs recharging. This process is performed from assorted means and sources, including diver's air bottle, CO₂ canister and manual pump.

Compared to the spring guns, pre-charged air rifles are usually expensive, but they deliver exceptional performance for the extra money. They are outstandingly accurate over their effective range, and many models have multi-shot magazines, meaning that the gun doesn't require full reloading after each shot. Because they are hyper quiet, a hunter can take out one animal without unduly disturbing those in the vicinity. Pre-charged guns can also deliver a performance that rivals some small-calibre propellant weapons.

A good air rifle is doubtless a valuable item for any hunter to have in his arsenal. Yet the fact remains that for anything over the size of a rabbit, or moving or at any distance, a hunter requires the undeniable force of powder and bullet.

Shotguns

Shotguns are smoothbore firearms with a unique type of ammunition. Instead of delivering a single projectile to a precise point, shotguns fire multiple pellets from a single cartridge, the pellets spreading to form a lethal 'cone' in the air. Because the spread of the shot compensates for a lack of precise accuracy, shotguns are superb weapons for engaging fast-moving or flying prey. (Note, however, that many people unfamiliar with shotgunning overestimate how much the shot spread will compensate for poor technique, and are shocked by how hard it can be to hit anything.)

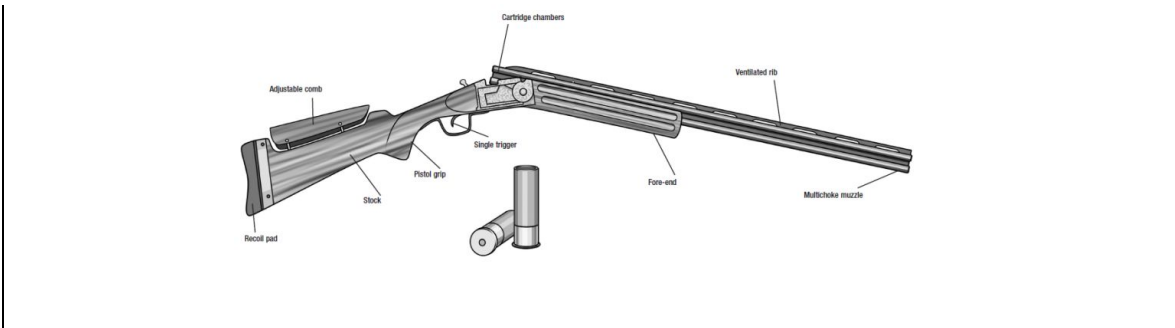
Shotgunning is therefore a unique form of shooting. The skilled shotgunner must understand the principle of 'lead' perfectly – firing at the point where the target will be when the shot arrives, and not at the target's visible presence.

Shot Size

The right shotgun ammunition for hunting is partly a matter of choice. Pellet size – and therefore the number of pellets in each cartridge – varies according to a defined scale. At the most diminutive end of that scale we have no.9 birdshot, of which there would be more than 500 pellets in a typical 28g (1oz) cartridge load. Conversely, each 000 ('triple aught') buckshot has a diameter of 9.1mm (0.36in) and only six would fit into the same load. Naturally, a hunter needs to select the right cartridge for his intended prey type, and this requires experience and solid advice. Small birds will be handled comfortably by 7–7½ shot, while larger birds (such as ducks) and rabbits require more in the region of 4–6. BB shot to no.2 shot is better suited to high-flying geese or large hares, and 00 buckshot could take on foxes, coyotes and similar larger animals. Remember that the heavier the shot, the further it will fly, therefore giving you a better range over smaller shot.

Double-barrelled shotgun

This modern over-and-under 12-gauge shotgun has an adjustable comb on the stock, a rubber recoil pad for comfortable shooting and an automatic ejection system. The shotgun is unsurpassed as a weapon for tackling moving game.



Shotguns can be divided into three basic types:

- Break barrel
- Pump-action (also known as 'slide guns')
- Semi-auto

Break-barrel guns are the classic shotgun type, loaded by opening a hinged barrel and inserting a cartridge directly into the chamber, before closing the barrel for firing. Most break-barrel guns are double-barrel types, the two barrels set in either an over-and-under or side-by-side configuration, giving the hunter two available shots before reloading. After the gun is fired, opening it results in either the empty cartridges being raised up for manual extraction, or thrown clear of the gun by mechanical ejection.

Break-barrel double shotguns are ubiquitous hunting weapons, and have been for well over a century. The much-debated argument over the relative superiority of over-and-under against side-by-side ultimately boils down to personal preference; while over-and-under configurations are the best sellers, the same results can be obtained in experienced hands with a good side-by-side. What is truly important is that you have the gun fitted to your body size, which can be done by an experienced gun seller. When the gun is mounted in your shoulder, and your cheek is sat on the upper part of the stock, you should be able to see a few millimetres' visual depth of the rib that extends along the top of the barrel. If you are instead looking into the back of the action, or the rib looks like a ski ramp, then the gun isn't going to shoot where you look and your hunting will be a frustrating experience.

Pump Guns

Pump-action shotguns are single-barrel weapons, in which cartridges are contained in an under-barrel tubular magazine. The cartridges are loaded into the weapon, and ejected when fired, by the manual action of cocking a slide around the magazine. One immediate advantage of the pump-action over the double-gun is ammunition capacity; some pump guns can have six or seven cartridges in the magazine, meaning that a hunter can open up with multiple shots at flocks of geese or other crowded targets.

The other crowning benefit of the pump gun is its awesome reliability. The manual mechanism is very forgiving in grubby conditions, and will keep operating even when the action is moderately contaminated with dirt, dust or even snow. Such reliability makes pump guns very dependable hunting weapons. Their simplicity also means that they tend to be available on meagre budgets.

Semi-auto shotguns are rather like pump-action guns, but with the reloading process performed automatically by recoil or gas operation rather than manually. The performance characteristics of the shot is no different from a pump gun, but the reloading can be extremely quick, making the process of taking multiple shots at targets of opportunity that much faster. Recoil is also softened in a semi-auto. The trade-off is that semi-auto guns have more complicated mechanisms, making them more prone to jamming than their manually operated cousins.

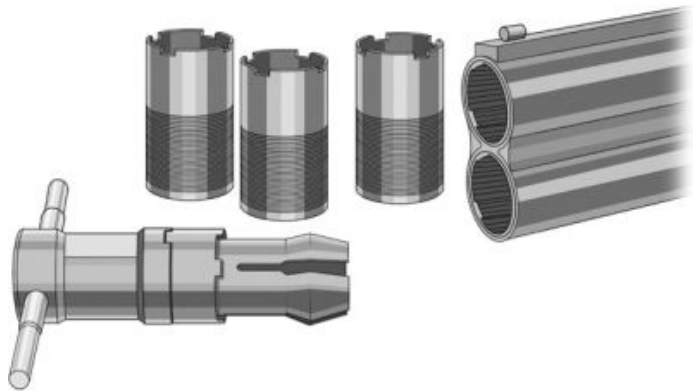
Side-by-Side Shotgun

Side-by-side shotguns have been traditionally popular for field shooting. This gun features double triggers, allowing the user to select which barrel is fired. Each barrel will be choked differently at the muzzle, and therefore will have different performance characteristics over range.



Removable Chokes

Removable choke tubes allow you to control the spread of shot, to some degree, from each barrel. Ensure that they are screwed in until they reach the stop position, and remove and clean the screw threads after each shoot.



Chokes

In shotgun terminology, the choke refers to the constriction of the barrel at the muzzle, which controls the spread of the shot once it has left the gun. The 'tighter' the choke, the narrower the constriction, and the more the shot pattern is squeezed together over range. Ideally, you want chokes in the gun that put 70 per cent of the shot into a 76cm (30in) circle at your intended range. Chokes are graded according to the following system, and are here shown with the range at which 70 per cent of the shot is within the circle described above:

Extra full – 41m

(45yds; 134ft)

Full – 37m (40yds; 121ft)

Modified – 32m

(35yds; 105ft)

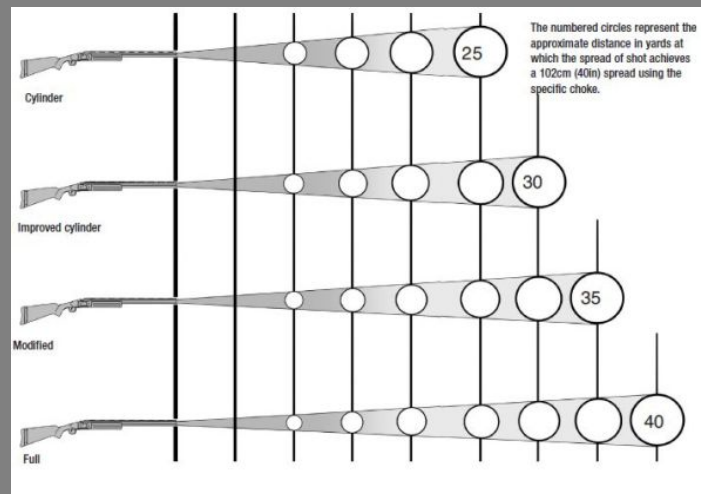
Improved cylinder – 27m

(30yds; 88ft)

Cylinder – 23m

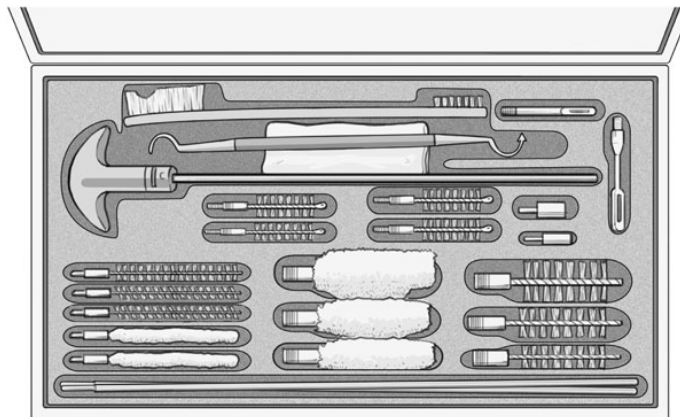
(25yds; 75ft)

Chokes are either 'fixed', which means it is integral to the barrel construction, or interchangeable – screw-in chokes that can be changed according to requirements. However, don't become too obsessed with choke changing. In a double gun, a combination of improved cylinder/modified or modified/full will serve you well in most field hunting situations.



Gun Cleaning Kit

A good gun-cleaning kit should contain everything you need to keep a weapon in working order. The phosphor bronze brushes are particularly useful for cleaning off stubborn propellant and lead deposits from the inside of the gun's barrel.



Whichever shotgun you choose is down to preference, purpose and budget. Before we turn to rifles, however, there are some general rules to bear in mind when handling a shotgun.

- Keep both eyes open when shooting, staring hard at your target and utilizing the advantage of stereoscopic vision.
- Place almost all your body weight on the front foot and lean forward into the shotgun. The only exception is when taking high overhead shots (passing from front to back), in which you might find it more comfortable to drop the body weight onto the back foot as the gun follows the target.
- Practise constantly to get used to lead 'pictures' – the visual gap between the muzzles and the target at the point of firing.
- Keep the gun moving as you take the shot – aim to spread the shot across the target. If you stop as you squeeze the trigger, you are likely to miss behind the target.

Rifles

If the subject of shotgun choice can provoke debate among experts, the debate around rifle choice can be even more vigorous. Hunting rifles come in numerous shapes, sizes and calibres, from small-bore guns suited only to shooting squirrels up to shoulder-pounding weapons that can drop an elephant.

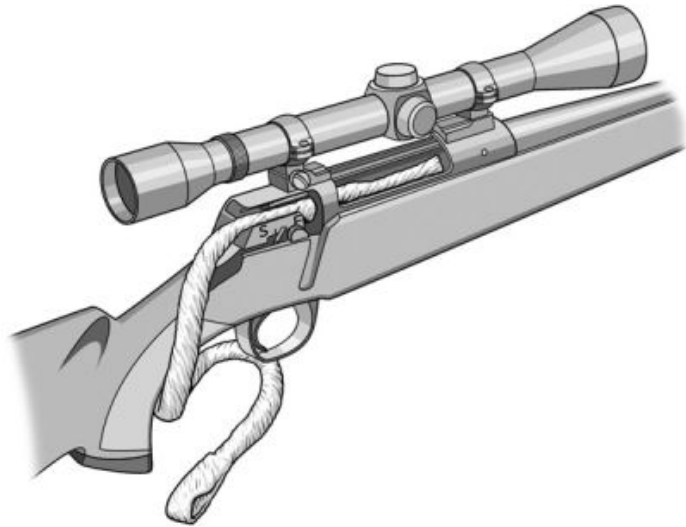
Types of Rifle

For most hunters, the ideal type of weapon to take into the field is the bolt-action rifle. Bolt-action rifles are generally rugged, reliable and outstandingly accurate, delivering precision kills (depending on the calibre) from a couple of hundred metres to distances of more than a mile. Although bolt-action mechanisms vary in construction from gun to gun, with significant differences in such features as the number of locking lugs, type of extractor, method of feed (either magazine or single shot) and build quality, all mechanisms perform the same job – a hand-operated bolt system loads, fires and ejects the cartridge.

An alternative to the bolt-action rifle is the semi-auto rifle. A semi-automatic rifle is a magazine-fed weapon in which a round is loaded, fired and its casing then ejected automatically with every pull of the trigger. Semi-automatic rifles are not available to the citizens of every country – they are prohibited in the UK, for instance – but they offer ultra-quick follow-up shots with no change in the shooter's body position. This is in contrast to the bolt-action gun, where the shooter has to perform a manual reloading action that can alert prey to his presence; the action might also force a change in his body position.

Pull-through

A pull-through cleaning device is essentially a long strip of cleaning cord that you draw through the barrel. They are useful for performing a quick bore clean in the field, when full cleaning is impractical.



Lever-action Rifle

Lever-action rifles are extremely robust field guns with a high ammunition capacity in the under-barrel magazine. They are best suited to standing or kneeling shooting, as the lever action can make reloading in the prone position an awkward procedure.



Semi-automatics have a mixed press as hunting weapons. The auto-loading mechanism of a semi-auto rifle doesn't generally seat the cartridge in the chamber as consistently as a bolt-action gun, hence it is less accurate over long ranges than the manually operated weapon. (For practical purposes, the differences in accuracy tend to be negligible at ranges of up to 300m/984ft.) The semi-auto might also promote, in undisciplined shooters, a tendency to rely upon firepower rather than accuracy to achieve a kill. Such is especially the case when assault-type rifles, with large magazine capacities, are used for hunting. It is far better to achieve a one-hit kill with a single shot. Given these reservations, the semi-auto does at least offer you a quick follow-up shot on a wounded animal, reducing the prospect of its disappearing off into the bush.

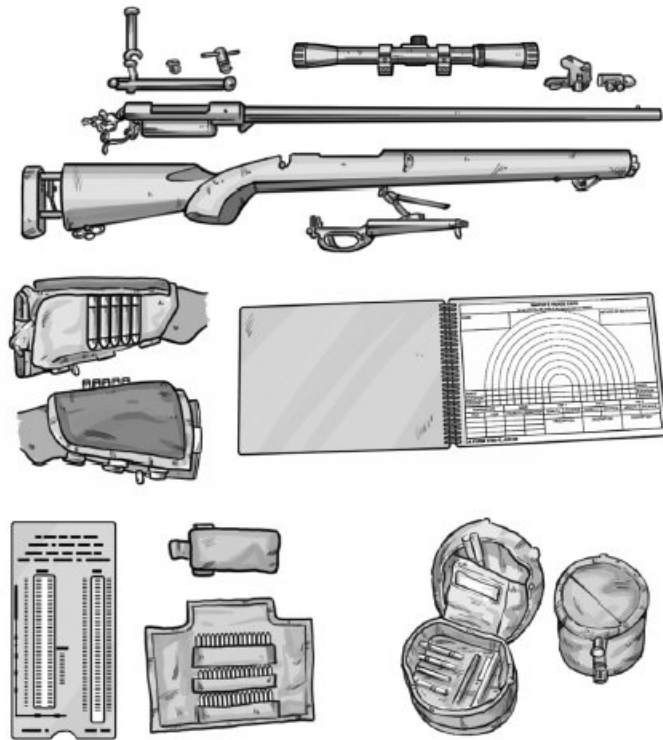
Lever-action Rifle

Another, rather traditional, option for rifle configuration is the lever action, most famously embodied in the Winchester/Henry series of rifles that dominated the American West. A lever-action gun usually feeds from a tubular under-barrel magazine, the cycle of loading, firing and ejection performed by operating a lever that forms an integral part of the trigger guard.

Lever-action guns are quick to fire and reliable in operation, and they remain very popular with hunters worldwide. In terms of disadvantages, they are often limited in the types of pointed ammunition they can use, as the bullet of one round rests against the primer of the round in front in the magazine, running the risk of an accidental cartridge discharge. (There are some specialist ammunition types that now negotiate this problem successfully.) For this reason, lever-action guns are often used for short-medium range shooting with lighter calibres, although there are lever guns on the market specifically designed for heavier game. Note that like the bolt action the lever action can be awkward to operate in certain positions, particularly if the shooter is lying prone.

Rifle Parts

In the field, ensure that you look after every part of the rifle, particularly the bolt group, barrel and optical sight. Here, we see the various components and kit of a US military M24 rifle.



US Weapons in Cold Weather

Sluggishness – normal lubricants thicken in low temperature, and stoppage or sluggish action of firearms results. During the winter, weapons must be stripped completely and cleaned with a dry cleaning solvent to remove all lubricants and rust prevention compounds. These lubricants will provide proper lubrication during the winter and help minimize snow and ice from freezing on the weapons.

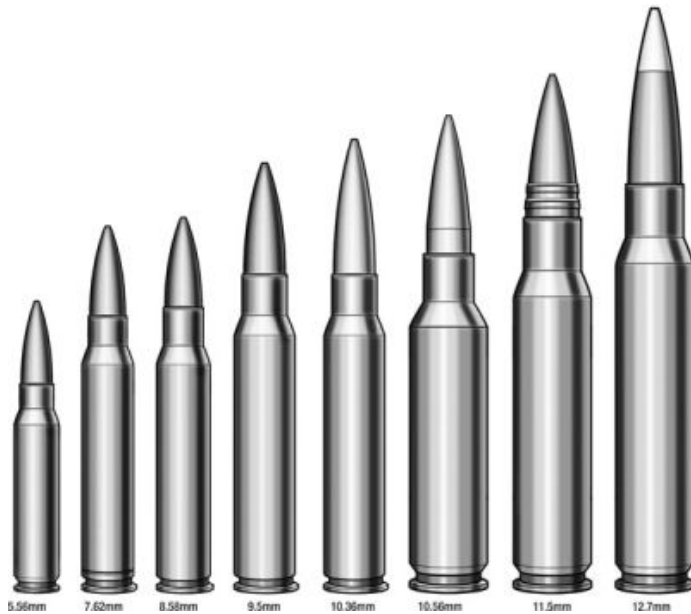
Breakages and Malfunctions – these can also be attributed primarily to the cold, although snow in a weapon may cause stoppage and malfunctions. One of the main problems is to insure that snow and ice do not get into the working parts, sights or barrel. The weapon must be carefully handled during movement through the snow-covered woods, and especially under combat conditions in deep snow.

Condensation – this forms on weapons when they are taken from the extreme cold into any type of heated shelter. This condensation is often referred to as 'sweating'. When weapons are taken into heated shelter for cleaning purposes, 'sweating' may continue for as long as an hour. Therefore, when time is available, wait one hour, remove all condensation and then clean the weapon.

– FM 31-70, *Basic Cold Weather Manual*, Appendix D

Ammo Calibres

Calibre selection is critical for hunting. If the round is too large or powerful for the prey, you risk destroying valuable meat. If, conversely, the cartridge is under-powered, the risk is that you will simply injure – rather than decisively kill – larger prey.



A final category of hunting rifle is the breech-loading rifle, this being loaded in the same manner as a break-barrel shotgun. These rifles tend to be at the large-calibre end of the spectrum, and hence are used for big game shooting. If you venture into this territory, make sure that you receive proper training before using the gun in earnest – the power of such weapons needs to be tamed by good technique if you are to avoid injury.

Calibre

The range of calibres available for rifles is truly vast. At the light end of the scale are the popular rimfire calibres, such as .22 Short (S), Long (L) and Long Rifle (LR). A .22 LR, one of the most popular rounds for bolt- and lever-action guns, has a bullet weight of below 40 grains, a muzzle velocity of around 320m/sec (1050ft/sec) and is useful for small game such as rabbits and gophers at ranges of around 50m (164ft). At the other extreme, a big-game centrefire cartridge, such as the massive .460 Weatherby Magnum, has a bullet weight of 500 grains, a muzzle velocity of 823m/sec

(2700ft/sec) and could bring down a bull elephant at 500m (1640ft). The LAR Grizzly rifle fires a .50 BMG round that, in military use, has made kills well beyond 2000m (6561ft).

Oregon Department of Fish and Wildlife – Firearms Hunting Safety Tips

The four primary rules of firearm safety:

MUZZLE Control the direction of your muzzle at all times.

TRIGGER Keep your finger outside of the trigger guard until ready to shoot.

ACTION Treat every firearm as though it were loaded – open the action and visually check if it is loaded. Firearms should be unloaded with actions open when not actually in use.

TARGET Be sure of your target, and what is in front of it and beyond it.

The most common causes of hunting incidents are:

- Hunter judgment mistakes, such as mistaking another person for game or not checking the foreground or background before firing.
- Safety rule violations, including pointing the muzzle in an unsafe direction and ignoring proper procedures for crossing a fence, obstacle or difficult terrain.

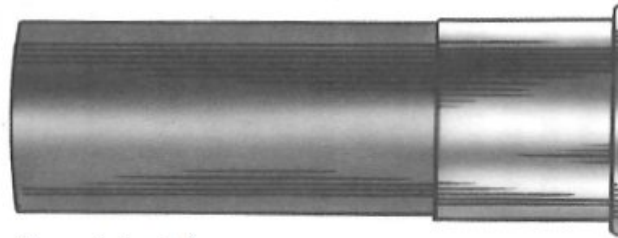
Other causes of hunting incidents:

- Lack of control and practice, which can lead to accidental discharges and stray shots.
- Mechanical failure, such as an obstructed barrel, improper ammunition or malfunctioning safety.

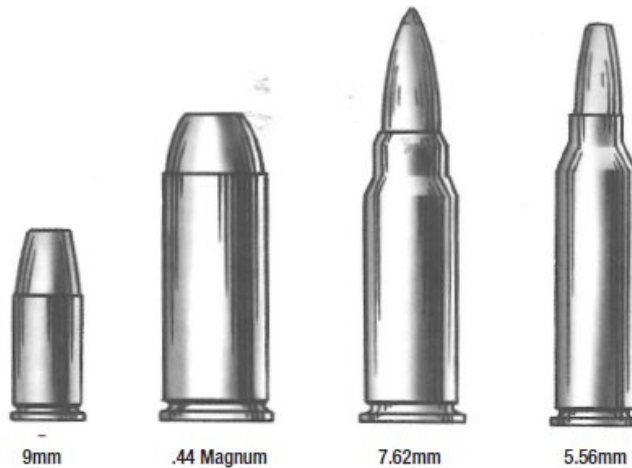
– <http://www.dfw.state.or.us/resources/hunting/safety/index.asp>

Types of Round

Here we see a variety of ammunition types, including two pistol rounds (9mm and .44 Magnum) two rifle cartridges (7.62mm and 5.56mm) and a shotgun shell (top). The pistol cartridges have little utility in a hunting setting.

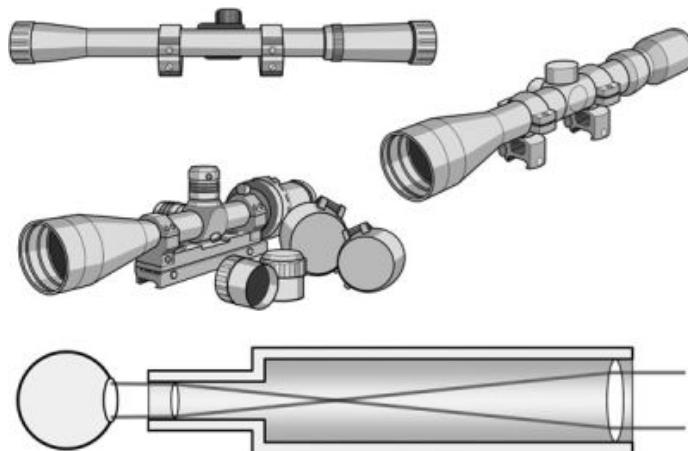


12-gauge shotgun shell



Telescopic Sight

Telescopic sights are refined pieces of optical equipment. Don't scrimp on your sight when you have bought an expensive rifle – buy the best sight you can afford and learn how to zero it properly.



The important point is that you select a calibre of rifle appropriate to its intended use. For small-game hunting, opt for a rimfire weapon in .17 or .22 calibre. (Be careful, however, of high-velocity rimfires such as the .17 HMR or .22 WRF Magnum.

The velocity of these rounds can destroy a small animal at close range.) For deer shooting, use a centrefire round. Such cartridges are larger, and therefore generate greater kinetic energy. Opinion varies on the best calibre to use for deer (the choice also depends on the species of deer, which vary significantly in size), but between .240 and .338 is a good bracket. Beyond this are the big-game calibres. These start with rounds like the .358 Norma Magnum and run up to the .600 Nitro (a 900-grain bullet), and are designed for the very largest creatures on the planet.

This run-through of calibre selections is very simplistic, so it is recommended that you get expert consultation when buying a rifle and choosing the right calibre for your needs. Above all, make sure that you learn to handle the weapon safely and fluently. Furthermore, learn the correct cleaning procedure for your rifle and give it a thorough clean after every hunting expedition – never put a gun away in your cabinet either wet or dirty.

M40A1 Rifle

The M40 rifle and its subsequent variants have been standard sniper weapons of the US Marine Corps since the 1960s and 1970s. Many of its more modern features, such as a weather-resistant fibre-glass stock, are also found on hunting rifles.



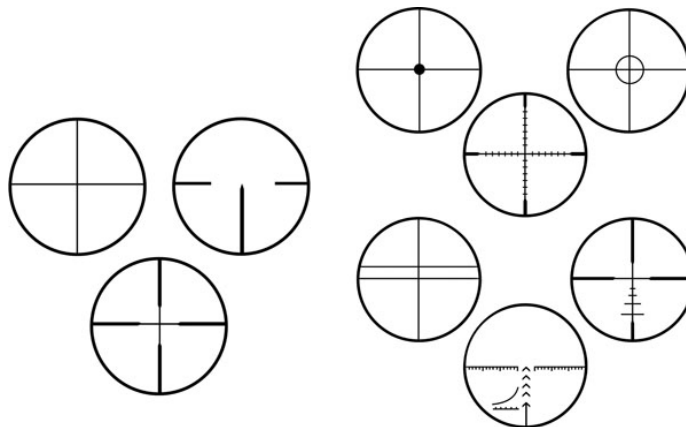
Sights

The sights you use on your rifle are obviously central to the efficiency of your hunting. There are basically two types of sight you will use – open sights and telescopic sights. Open sights are the non-magnifying sights that generally come fitted to the rifle as standard. The classic arrangement is a V-shaped adjustable rear sight that corresponds with a post-type front sight, but there are variations, such as aperture sights. In general, open sights are generally used for hunting either small creatures at very close ranges or fast-moving, large and dangerous prey, when the hunter might need to fire multiple follow-up shots without taking his eyes off the target. In most other circumstances, a telescopic sight is required for the optimum accuracy.

When buying a telescopic sight, expert advice at point of sale is essential. Scopes come in a bewildering range of formats and magnifications, and a poor choice can result in missed kills or wounded animals. A basic consideration is the magnification and diameter of the objective lens, expressed in a formula such as 6x40 – meaning a magnification power of six and an objective lens diameter of 40mm (1.5in). The larger the objective lens figure, the better the scope will be for use in low-light conditions (the larger the lens, the more light it lets in). High-magnification lens might seem desirable, but note that the greater the power, the less the field of view, making it more difficult to acquire targets visually. Lower magnifications often present a brighter image through the lens.

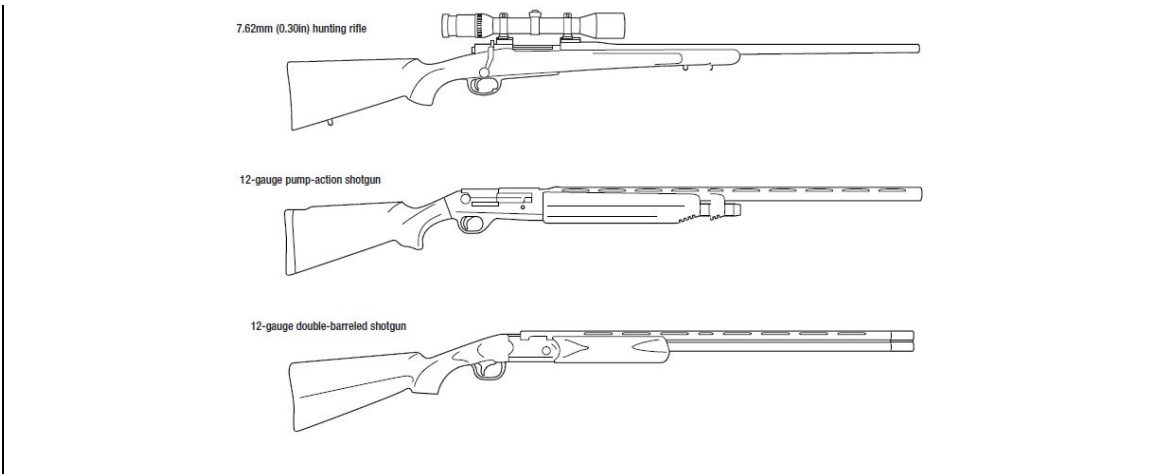
Sight Reticles

There is a huge diversity in the available patterns of optical sight reticles, from simple crosshairs (ideal for uncomplicated short-range shooting) through to graduated systems for calculating windage and drop over hundreds of metres.



Types of Hunting Firearm

For a rounded hunting experience, these three guns would provide a good mix in your firearms cabinet. You could also add an air rifle for short-range small game shooting.



Many modern telescopic sights now feature adjustable magnification. These systems are undoubtedly useful, as they allow the sight to be adapted for the specific hunting conditions. However, make sure that you don't spend your time constantly adjusting the power – remember that the sight is only part of the accurate shot, and won't do all the hard work for you.

Adjusting Telescopic Sights

A telescopic sight, no matter how expensive it is, will be little more than useless if it is not zeroed properly. Learning how to zero a telescopic sight to the point of impact of the rifle is best done on a shooting range under expert tuition. You will also need to understand the relationship between the gradations on the reticle (the cross hairs that form the aiming point in your sight) and different ranges of shot – again your shooting coach should provide you with advice.

Finally, ensure that you have high-quality mounts securing your sight to the rifle, and re-zero the gun if either the sights or the mounts receive a hard knock. Remember that your chief goal as a hunter is a clean kill – you owe that at least to the animal that is about to feed you.

2

Tracking your prey can be the most challenging part of the hunt. The ability to pit yourself against an animal and triumph over its natural advantages is a heady feeling.

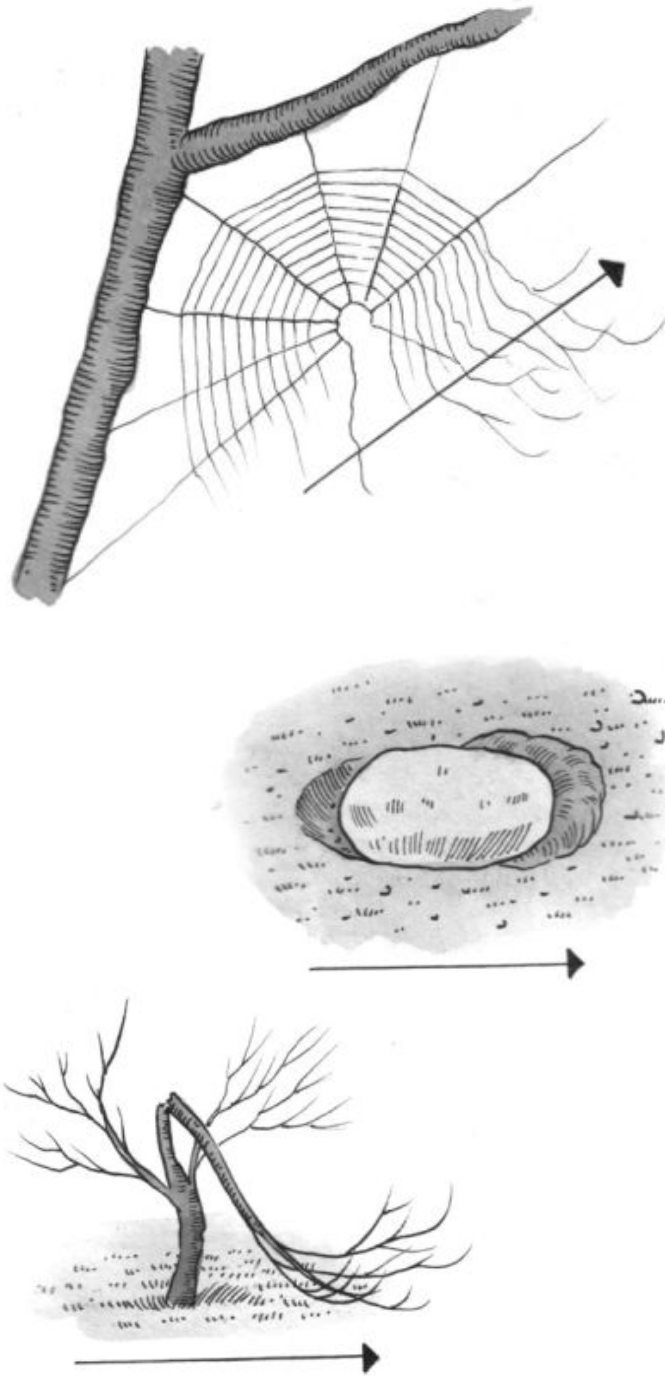
Tracking and Hides

Successful trapping skills come with time, patience and experience. Developing an understanding of your prey and how to stalk it, along with building and using hides, can give you a much-needed edge over your quarry. The ability to utilize your senses to their full capacity will never be so important as when you are tracking. Hearing, smell, sight, touch, even taste – all will help to build up a picture of the animal's movements and actions, even its thought processes, as you use logic and instinct to track and follow your prey.

This chapter will cover general guidelines on tracking and hides, with animal-specific pointers being discussed in later chapters. An initial point worth noting is that tracking frequently demands physical stamina on your part. You may have to hold cold, uncomfortable positions for long periods of time, or crawl low through ditches. You might also have to hike up steep mountainsides or trail behind an energetic dog for hours through grassland. For such reasons, ensure that you are physically fit, if only by going out into the wilderness on a regular (i.e. weekly) basis. You might also want to invest in physical training that improves your flexibility; having a more flexible body will make crawling, climbing and hide occupancy more comfortable.

Signs of Movement

Here are three classic signs of animal movement (with arrows indicating direction of travel): broken cobwebs, displaced stones and damaged vegetation.



Sign

Sign – a recent indication of the presence of an animal or bird – is the element that dictates tracking. Sign effectively forms the markers by which you piece together the movement of an animal, and then use that information to track it to source or wait

along one of its trails. The typical sorts of animal sign you can encounter are the following:

Disturbed Vegetation

Look for any signs that vegetation has been broken, displaced or otherwise modified by a passing animal. Branches might be snapped as an elk pushes through them; a bear can leave claw marks on trees to mark its territory, or might dig up roots and tubers; deer will strip the bark off tree saplings; or you might come across the husks of nuts stripped by squirrels. The height of broken vegetation will also give you a hint as to the size, and therefore species, of the animal. Essentially, look for anything that requires external force to perform, and use this along with other forms of sign to deduce which type of animal you are dealing with. (Swot up on the classic behaviours of your prey, so you can match sign to prey type.)

Droppings

Animal faeces can be one of the most direct signs that an animal is in the area. The internet will provide illustrative examples of the faeces of most types of animal, but there are some general principles you can follow to help with identification, matching droppings to animal:

- Carnivorous and omnivorous animals usually produce long, tapering stools.
- Herbivores produce rounded dung piles matted with chewed vegetation.
- Birds that eat seeds, fruit and vegetation tend to make liquid dung.
- Carnivorous birds that eat larger prey produce dry pellets.

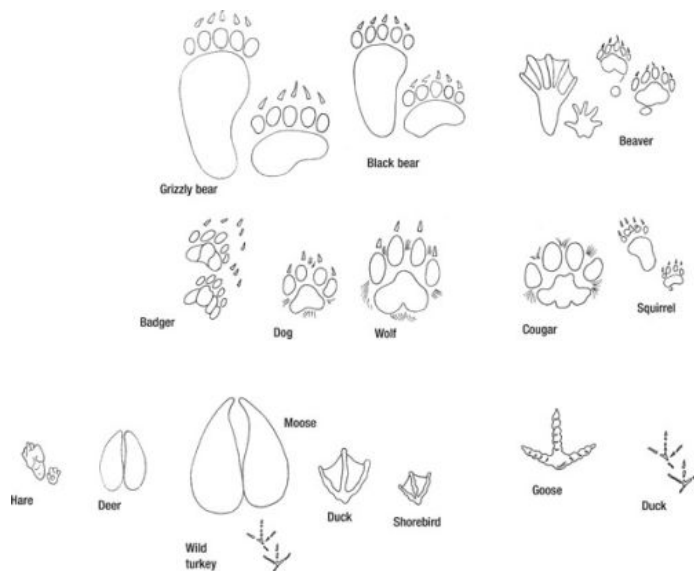
Evaluating Sign

This hunter is fortunate to have a clear pattern of sign: a pile of animal droppings from which animal tracks recede into the distance. Such clear and regular sign, however, can be rare, particularly in arid regions where the ground is hard and dry.



Footprints

The prints left by animals can be a clear indicator of species, while also providing you with information about the animal's direction of travel, speed of travel (via the spacing between prints) and time of travel (older tracks appear crumbly and have more debris).



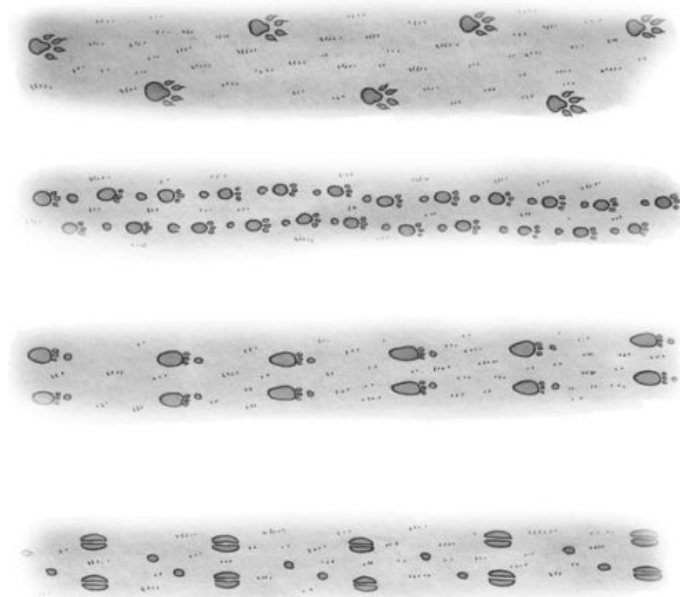
In some faeces specimens it will still be possible to identify the types of food the animal is eating, which in turn can give some suggestion of where the animal goes to eat. Carnivorous animal dung often contains clumps of fur or pieces of bone, while herbivore scat can display seeds and plant material. If there is something particularly distinctive in the scat, use this information to narrow down your search area. Note that with certain species, such as rabbits, the scat is often found near their lays, so is in itself a good indicator that you are in the right place.

Feathers, Fur and Bones

As feathers and fur can be caught on vegetation as an animal passes by, both can provide you with an excellent means of identifying the animals in an area. The same can also be found at kill sites, of course, which can help you identify both local predators and prey. Some animals act as 'indicator' animals, whose presence indicates that a particular place is suitable for a wide variety of animal life. When voles and rabbits are prolific, for example, carnivorous animals are usually present too, and deer suggest that the vegetation food sources are plentiful and accessible.

Animal Gait

It is not only the shape of individual animal tracks that provides you with information, but also the arrangement of the tracks in relation to each other. Different animals have different gaits – compare, for example, the bear at the top with the rabbit at the bottom.



Animal Tracks

Tracks are naturally the sign par excellence. After all, you might successfully follow sign to find an animal, only to discover that it is not the animal you wished to hunt – recognizing animal tracks can prevent this from happening.

There are currently three main types of animals, as classified according to their feet: plantigrades, digitigrades and ungulates. Plantigrades include any animal that walks on the soles of its feet. These include humans and, in hunting terms, animals such as bears, rabbits, hares and badgers. Digitigrades walk on their toes and include any feline or canine. Ungulates are animals with hooves, where the toes have grown together to form either a solid or a cloven hoof. This group includes deer, sheep, goats, horses and cows.

Examples of animal tracks are given in the illustrations seen in this chapter (see illustration left). Tracks can not only give you species information, but also the direction of the animal's travel, the size of the particular creature and the speed at which it was travelling – the track spacing will typically open up as the animal accelerates.

Even if you can't spot any identifiable track, there can be other, more subtle, signs that a creature has passed by. An animal crossing dewy grass knocks away moisture with each impact of the foot, creating a dull area. Leaves are compressed when walked upon, and grit is pushed down into the surface of a track by the impact of a hoof. Try getting down to near floor level and scanning a trail with the light shining onto it from the other side – footmarks will often appear as either dull or shiny patches, depending on the contrast with the floor. Although these do not generally provide comprehensive information about the species of animal that has passed by, the spacing and rhythm of the prints will allow you to make an educated guess.

Vocalizations

The sounds of animals are very obvious indicators of their presence, from the grunts of a wild pig to the calls of a wild turkey hen. The volume and direction of the call can give you a lead as to the bearing of the hunt, although take care in mountainous or heavily wooded terrain, when the dynamics of sound in such echoing environments can fool your sense of direction.

Putting Sign Together

While it is easy to identify single instances of sign, putting them all together to determine a course of tracking is often problematic. Stand at one piece of sign and

explore methodically around it in a circle until you find a corresponding sign some distance away. Link the two together in your mind's eye. Stand near the second piece of sign and repeat the process until you have three pieces of sign giving you a good general direction to follow. Also read the landscape as part of your deliberations, noting natural avenues of movement that animals are likely to follow.

The Effect of Time on Sign

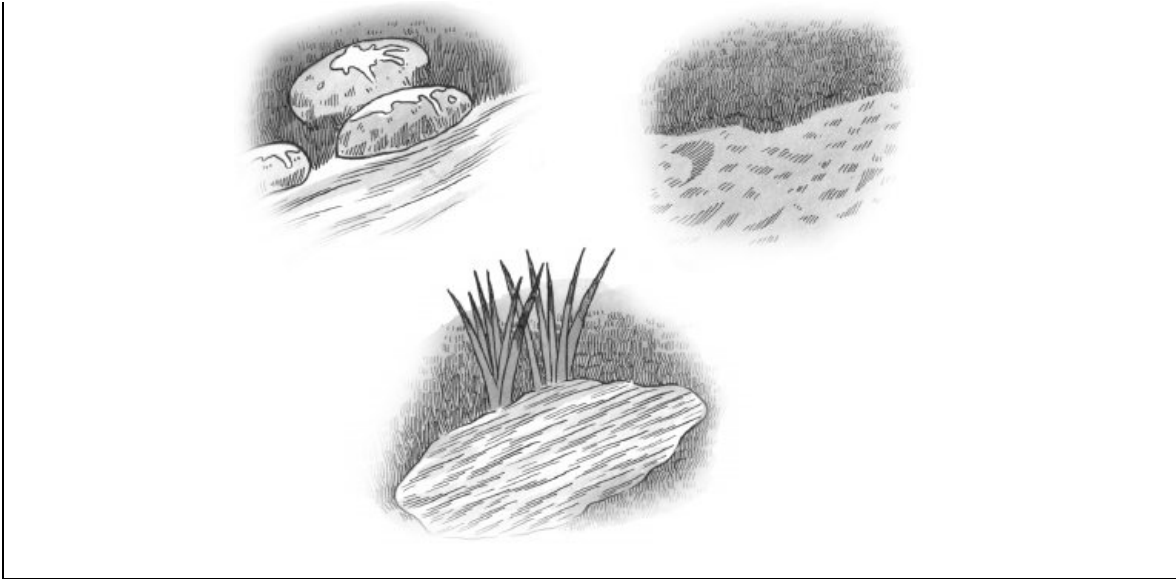
Remember that sign is affected by the passage of time:

- The edge of a paw or hoof print will become more crumbly over hours and days. It will also fill up with dirt, leaves and other debris.
- Faeces recently passed retains heat and scent, becoming dry and scentless with age, or crumbling up.
- Flattened grass usually returns to the vertical within three or four hours of being trampled.
- If the entrance to a den or burrow is overgrown, it probably means that it is no longer occupied.

Take note of 'transitional areas' – areas between two contrasting terrains, such as a forest and open fields. These are often inhabited because of their convenient location between feeding zones.

Displacement

When quarry moves from one type of surface to another, it leaves signs of its movement, such as water on rocks (top left), sand in grass (top right) and mud on vegetation (bottom).



Once you have identified the direction of an animal, or, better still, spotted the creature itself, you are ready to go on the hunt.

Staying Hidden

Camouflage can greatly increase your chances of successfully stalking and tracking prey. There is a plethora of excellent camouflage clothing and equipment available for the hunter on today's market, including photo-realistic fabrics that authentically represent your backdrop. For good general lessons in camouflage, however, we can turn to military expertise. For soldiers, camouflage can mean the difference between safety, capture and even death. The following mnemonic covers the basics taught to most units.

'Seven S's'

- Shape
- Shine
- Silhouette
- Shadow
- Sound
- Speed
- Surroundings

Teamwork

Hunters might find that working in pairs improves their kill rate, in much the same way as military sniper teams. One person takes responsibility for shooting, the other for spotting the target.



These principles can be adapted specifically for tracking and hunting. Fundamentally, they involve breaking up the human silhouette and shape so that it is less recognizable and more in keeping with the natural surroundings. While human enemies will actively look for the shape of a helmet or boot prints, even animals can recognize human shape or unnatural colours and textures, and may instinctively run from them. Therefore, altering your shape, colour and texture so that you blend in means that you are far less likely to stand out or attract attention, leaving you free to track your prey.

The easiest way to camouflage yourself is with professionally made clothing. Yet the hunting process can take you through areas of contrasting terrain, when the ability to improvise becomes important. Such is our focus here.

Shape, Colour and Texture

Visual camouflage essentially strives to break up the human shape so that it disperses more naturally into its surroundings. You can easily do this by adding pieces of vegetation or strips of natural coloured fabric to your clothing, headgear and equipment, so that your relatively smooth outline is broken up (nature contains very few straight or smooth lines). The more your shape crumples into the background, the less noticeable it is. If you are using vegetation, ensure that it is taken from your surroundings and that you change it when your environment changes, such as when moving from a wooded area to a grassy one. Vegetation will alter its colour and

appearance when it starts to die, so bear in mind that you will also have to change it if you want to stay concealed for long periods of time.

Silhouette

When crossing fences, keep your body parallel to the top of the fence to reduce your silhouette.



For particularly vigilant prey, such as wild turkey, you may also need to camouflage your gun. As mentioned, there are few straight lines in nature so a gleaming, ramrod-straight gun barrel will be conspicuous. You can buy guns that are already camouflaged, but you can also improvise by wrapping camouflage fabric or netting around key points of the weapon. Whatever modifications you make, however, make sure you don't obscure the operating mechanism or the sights.

Shine, Shadow and Silhouette

Do not forget to dull any exposed skin such as your face and hands, which can stand out remarkably clearly, especially when bathed with sweat. Charcoal made by burning paper or wood is useful if you do not have shop-bought camouflage paint. Apply the camouflage in an irregular pattern that suits your environment (see the illustrations on p88). The best skin camouflage uses a variety of shades to mirror the contrasting backdrop found in nature, with more prominent features, such as forehead, nose, chin and ears, coloured more darkly. Shaded areas, such as under the eyes or chin, can be coloured in a lighter hue. Applying paint, charcoal or mud decreases shine as well as dispersing silhouette. Remember to also apply it to your hands (if you aren't

wearing gloves), ears and neck, including the back of the neck, and reapply as often as needed.

Shine from personal belongings or equipment will be a problem for the hunter if not concealed. Any shiny surfaces should be dulled with paint, mud, charcoal, dust or even candle smoke. Check your appearance (or ask a buddy), looking for anything that could catch the eye, such as boot or belt buckles, zippers, watches or jewellery. Take extra care if using binoculars or sights, which can flash when they catch the light and be visible for miles.

Shadow can be a great help when tracking, as it conceals colour, silhouette and shine. The deeper the shadow, the darker it is, so use it to your advantage, along with vegetation where possible, for concealment. Shadows can also form useful passing points when you are moving across gaps in terrain, as walking through them will make it harder for you to be spotted.

On the flip side, your own shadow can give your location away, even if you are concealed. When it is low on the horizon, the sun causes a shadow that can be up to several metres long, projecting out from behind your position of cover and negating most of the effort you have put into camouflaging yourself. Tracking at certain times of the day, such as dawn or dusk (as long as the sun is below the horizon), will cut down on shadow, as will sticking to shaded areas where you can. If this is not possible, minimize your shadow by reducing your height by crouching or crawling, which also minimizes your silhouette and decreases your chances of being spotted. Stay as close as you can to the ground and keep your body parallel to whatever you are crossing. Consider speed here – move as slowly as you can, as fast, jerky movements will attract much more attention than slow, fluid progress. Keep in mind that you will not be as aware of the movements of animals when moving yourself, so stop at regular intervals to ensure that you spot or hear any other movement, especially if it takes you off the trail you were following.

Blending In

While tracking in close proximity to prey, make your body mirror the natural shapes around you, reducing your visibility.

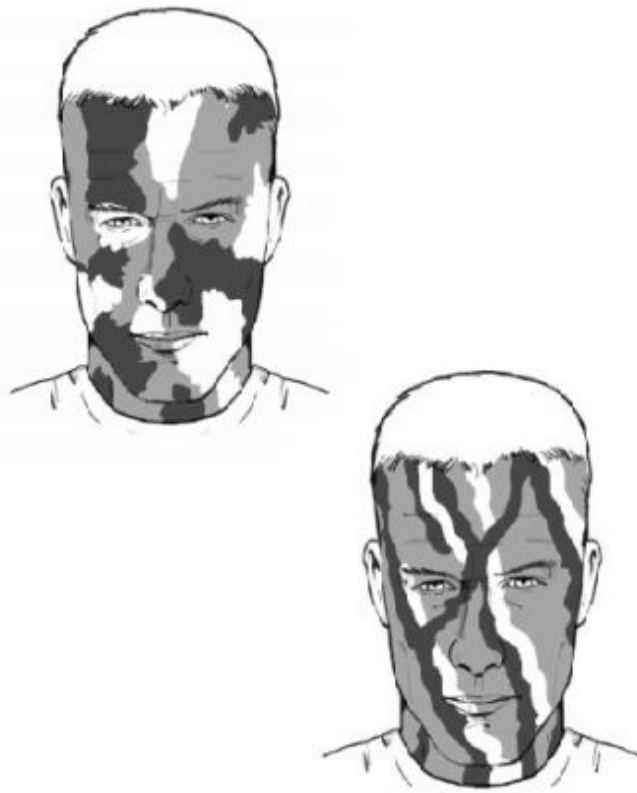




Face Camouflage

The 'blotch' pattern of face camouflage here is ideally suited to temperate deciduous (leaf-shedding) areas, desert and barren, snowy landscapes. Don't overdo the dark areas – too much dark camouflage can make you stand out even more.

The 'slash' pattern of camouflage is designed for coniferous, jungle and grassy areas, the long, contrasting stripes down the face blending in with the vertical lines of the surrounding vegetation.



Sound

Most movements cause some level of sound, and birds and animals will flee from sudden, loud or unfamiliar noises. At the very least, it will cause prey to exercise much more caution, and be more vigilant.

Using Shadows

Long shadows can provide you with good points for crossing open ground, as the shadow will help break up your silhouette.



You can minimize your chances of being heard even before you begin tracking. When dressed in your camouflage, carrying your equipment, jump up and down on the spot a few times. You will be able to instantly identify any audible clues that could give your position away while you are on the move. If you find something that jangles, taps or otherwise makes a noise, remove it or tie/tape it firmly down. Ensure that any electronic devices that might emit a noise are turned on to silent beforehand. The sound of a phone or watch alarm going off, plus your attempts to muffle it, will instantly send your quarry running for safety.

A slow, considered pace will reduce the chances of the greatest risk of sound – footsteps. If you are walking through an area with fallen leaves and twigs – very likely if you are hunting – the chances of your stepping on something that rustles or cracks are very high. Special Forces soldiers use distinctive steps to lessen this possibility.

When stepping forwards, raise your knee high, then lower the toe carefully to the ground, brushing aside vegetation before gently planting the heel. Alternatively, lower your heel first and make a sweeping action with your toes to clear a space into which you put your weight. When moving through foliage, avoid the temptation to grab and snap off awkward branches. This will not only give an audible signal, but the white, broken end of the branch will later indicate that someone has passed through.

Giving yourself away

When in any hunting environment, remember that animals have superior senses to your own. Obey strict rules of scent, light and noise discipline. Avoid smoking or wearing strong-smelling deodorants; remember that fire and flashlights will scare away many animals at night; and watch your step – a single twig broken underfoot can spoil a long stalk.



Try, if you can, to utilize any natural background noise as cover. There may not be much in isolated areas, but there will always be some noise, such as birdsong, activity from far-off roads and wind or rain. The last of these, especially, can be excellent mufflers of any sound you might make. However, bear in mind that the noise will also make it harder for you to hear any movement by birds or animals, so you will have to further rely on other sign if you are tracking in these conditions. (Many animals also hide away in bad weather, resulting in far less auspicious hunting opportunities.)

Scent

Just as your shadow can easily give you away, so can your scent. You could spend days planning and assembling the ideal camouflage for your surroundings, but the wrong scent can cause animals or birds to bolt even if they cannot see you. While a human will always smell of something, you can minimize your chances of olfactory detection by avoiding the following:

- Strong-smelling foods
- Soaps, shampoos or artificial fragrances
- Tobacco products
- Sweets or gum
- Cosmetics
- Insect repellents

Basically, any artificial scent will be out of place and act as a warning sign to your prey. Camouflage your scent by washing yourself and your clothes without soap, or, at least, use an unscented variety, and rub aromatic herbs or plants onto your clothes and person. Pine and mint are especially good, as their scent is strong, pleasant to most humans and recognizable as natural by animals and birds. If there is nothing else to hand, stand in front of a fire and allow the smoke to impregnate your clothes. Most animals are used to the lingering scent of old smoke after forest fires, so this should not alarm them.

Stalking

Stalking your prey once it is spotted requires patience and nerve. Your objective is to put yourself within a workable range for your primary weapon, which might be a few dozen metres or perhaps hundreds of metres. In essence, you have to think of yourself as an animal, soundlessly but ruthlessly pursuing its prey, but also using every ounce of your intelligence to outwit the superior senses that the animal will undoubtedly possess.

Team Hunting

Hunting in a team is advisable in remote regions, for reasons of safety as much as efficient hunting. Here two hunters are working in tandem with an experienced guide, who is able to advise them about the best locations for hunting.



Dead Ground

When stalking prey, use as much natural cover as the ground affords. This hunter is using a deep gulley to move up close to a deer, although the animal's posture suggests it might be alert to sound and smell warnings already.



The route you choose is of paramount importance to the success of the hunt. Choose and follow a route that gives you maximum cover, utilizing features such as ditches, large trees, sections of bush, deep foliage, rocky outcrops or the reverse side of hills. Be on the lookout for any gaps in cover, which could cause you to expose yourself briefly. In the same way, any obstacles must be factored in – don't attempt to stalk a creature across large or difficult obstacles, as you are almost certain to make noise during the effort of crossing them. Just keep as close to the natural shape of the terrain as possible. Alternative routes should also be planned out in your mind's eye for when your quarry or the wind changes direction, or if your way becomes blocked.

US Army Tip: Upright Stalking

Take steps about half your normal stride when stalking in the upright position. Such strides help you to maintain your balance. You should be able to stop at any point in that movement and hold that position as long as necessary. Curl the toes up out of the way when stepping down so the outside edge of the ball of the foot touches the ground. Feel for sticks and twigs that may snap when you place your weight on them. If you start to step on one, lift your foot and move it. After making contact with the outside edge of the ball of your foot, roll to the inside ball of your foot, place your heel down, followed by your toes. Then gradually shift your weight forward to the front foot. Lift the back foot to about knee height and start the process over again.

Keep your hands and arms close to your body and avoid waving them about or hitting vegetation. When moving in a crouch, you gain extra support by placing your hands on your knees. One step usually takes one minute to complete, but the time it takes will depend on the situation.

– US Army, FM 3-05.70, *Survival* (2002)

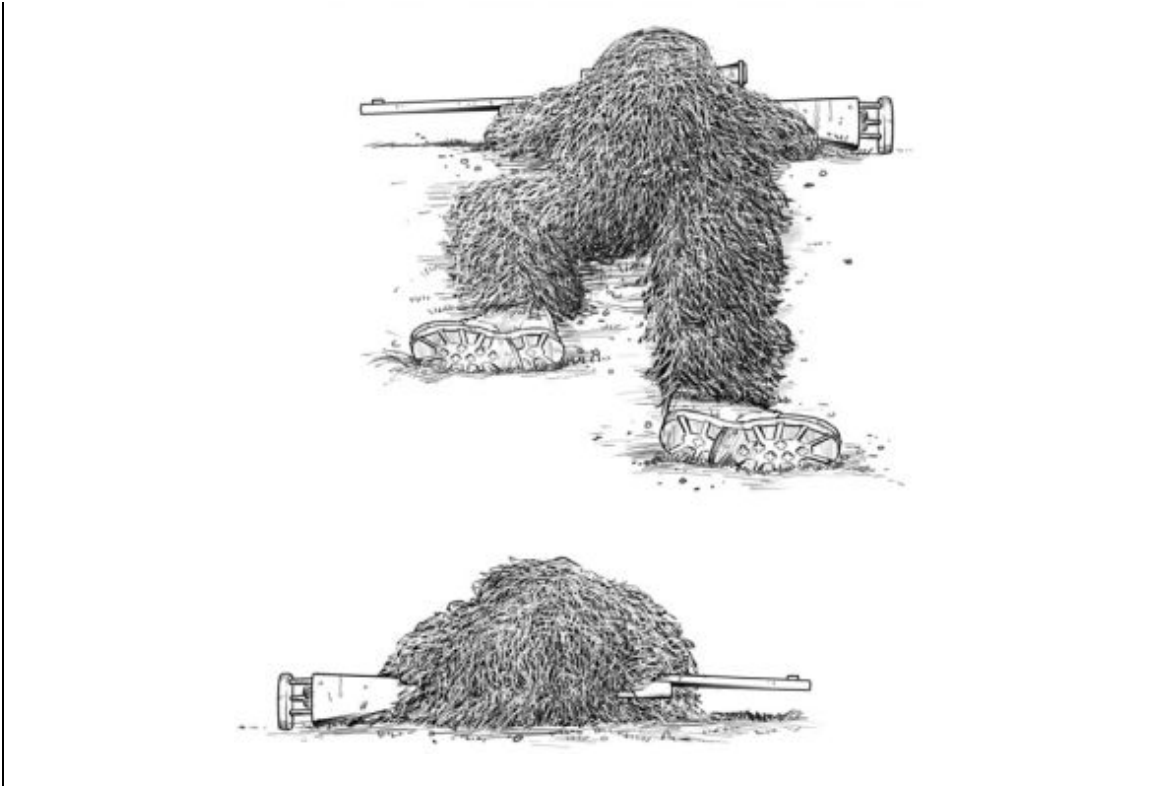
Moving Undetected

The basic principle of stalking is to stay low at all times, either in a crouch or a crawl. Practise crawling before you go out into the field, and make sure that the rifle muzzle stays clear of the dirt.



Low Profile

Note here how the hunter, clad in his ghillie suit, is cradling his rifle in the crook of his elbows, keeping the weapon out of the mud as he inches forward towards his prey.



As you move, be alert at all times. Pause to listen as well as look, avoid stepping on any twigs, being constantly aware of the position of the sun and your shadow. If, however, you are spotted by the animal, don't panic. It does not mean that all your time and careful tracking will necessarily be wasted (unless the animal immediately flees, of course). Your movements should already be very slow and gentle, so freeze and stop all movement. Stay frozen for as long as it takes for the animal to lose interest and turn its head away. (Note that many animals respond more to movement than static sight, and often struggle to interpret the meaning of very still objects.)

If you need to retreat and take actual cover, move backwards very slowly, keeping your head and body as close to the ground as possible until you are hidden from view. Aim to retrace your steps, as you may not be able to spot any twigs or dry leaves under foot. Also consider your environment; if you are surrounded by bushes, you are less likely to draw attention if you crouch down. On the other hand, if the terrain has more tall, spindly trees, standing straight and upright will help you to blend in with your surroundings.

US Army Tip: Low Movement

Crawling – crawl on your hands and knees when the vegetation is too low to allow you to walk upright without being seen. Move one limb at a time and be sure to set it down softly, feeling for anything that may snap and make noise. Be careful that your toes and heels do not catch on vegetation.

Prone stalking – to stalk in the prone position, you do a low, modified push-up on your hands and toes, moving yourself forward slightly, and then lowering yourself again slowly. Avoid dragging and scraping along the ground as this makes excessive noise and leaves large trails for trackers to follow.

– US Army, FM 3-05.70, *Survival* (2002)

US Army Tip: Advice for Crossing Rivers

Your first step is to look for a high place from which you can get a good view of the river or stream. From this place, you can look for a spot to cross. If there is no high place, climb a tree. Good crossing locations include:

- A level stretch where it breaks into several channels. Two or three narrow channels are usually easier to cross than a wide river.
- A shallow bank or sandbar. If possible, select a point upstream from the bank or sandbar so that the current will carry you to it if you lose your footing.
- A course across the river that leads downstream so that you will cross the current at about a 45-degree angle.

The following areas possess potential hazards; avoid them, if possible:

- Obstacles on the opposite side of the river that might hinder your travel. Try to select the spot from which travel will be the safest and easiest.
- A ledge of rocks that crosses the river. This often indicates dangerous rapids or canyons.
- A deep or rapid waterfall or a deep channel. Never try to ford a stream directly above or even close to such hazards.
- Rocky places that could cause you to sustain serious injuries from slipping or falling. Usually, submerged rocks are very slick, making balance extremely difficult. An occasional rock that breaks the current, however, may help you.
- An estuary of a river because it is normally wide, has strong currents and is subject to tides. These tides can influence some rivers many kilometres from their mouths. Go back upstream to an easier crossing site.
- Eddies, which can produce a powerful backward pull downstream of the obstruction causing the eddy and pull you under the surface.

– US Army, FM 3-05.70, *Survival* (2002)

One key point about the stalking process is to stay downwind of the animal you are hunting, so that wind strikes the animal before it hits you. If you position yourself upwind, your scent will be carried to alert nostrils and the animal will disappear quickly. Putting yourself downwind of the animal might involve a considerable detour, but there are few shortcuts to stalking if you want to put yourself in an advantageous position for the kill.

Hides

A hide is a camouflaged static position in which you can remain hidden while waiting for prey to appear, and from which you can take a shot. In essence, using a hide is the opposite of stalking – you are waiting for the creature to come to you, rather than the other way round.

Hides are emplaced unobtrusively in positions of natural cover, such as against bushes, in areas of high foliage or against reeds bordering a lake. However, wherever you choose, the critical factor is that the camouflage material you use in the construction of your hide actually matches the background against which it is placed.

US Army manuals again provide some unwittingly useful advice on the subject of hides, although in the case of FM 5-103, *Survivability*, it is specifically talking about the requirements of camouflaging military positions:

Field Hide

This basic hide is used by the hunter for pigeon shooting. Whatever your hide design, ensure that you can stay in it with reasonable comfort for several hours. A light folding camp stool and a flask of hot drink can make all the difference to the hunting experience.



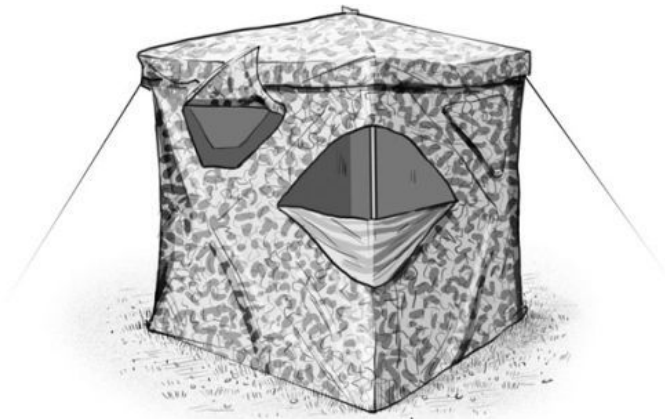
If natural material is used for camouflage, there are two major considerations. First, gathering natural material nearby creates voids, changes the appearance of the natural surroundings and reduces the effectiveness of the camouflage. Therefore, limbs are cut from several trees, not just one. Also, limbs are cut as close to the trunk or main branch as possible. A tree should still appear 'natural' after branches are cut. Secondly, while natural material aids both visual and infrared camouflage initially, it loses effectiveness as it dries out. Thus, when vegetation is cut for camouflage use, it is watered and/or replaced as it withers. The replaced camouflage is disposed of so that it does not draw attention to the concealed area. Excess soil from constructed positions, waste materials and any worn or damaged camouflage are moved to another area and made to look like natural terrain. These materials are also used for constructing a poorly camouflaged dummy position.

– FM 5-103, *Survivability* (1985)

This passage is relevant to hide construction in several respects. First, it makes the important point that no matter how skilfully you construct your hide/position, if you modify the surroundings too much in the process you will only serve to draw attention to yourself indirectly. Also note that if you use natural materials in a hide, you will have to watch out for their appearance changing over time.

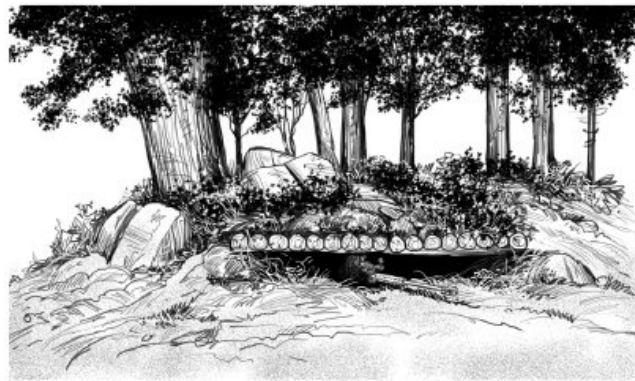
Tent Hide

This modern hunting hide is essentially a camouflaged tent with apertures for the gun. Even if your hide is made of camouflage material, think carefully about its location in the environment – aim to make it blend seamlessly into the backdrop.



Belly Hide Position

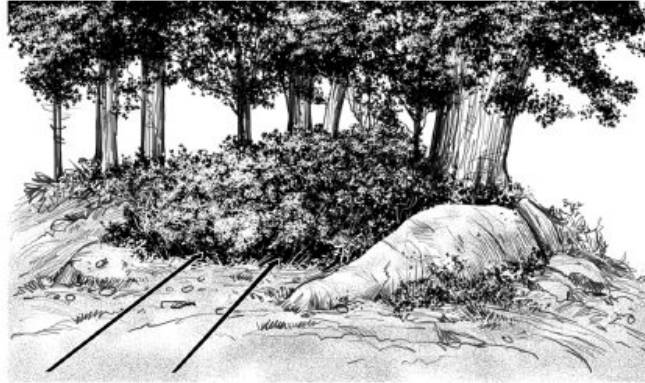
Here, and opposite, we can see military fighting positions with applications for the hunter. In this image, the soldier has created a roof of logs over a shallow scrape position, camouflaging the logs with foliage and leaving a thin opening for the rifle.



Constructing a hide from your surroundings is best attempted by simply modifying existing features, such as low-hanging branches or a fallen tree. Some extra foliage or camouflage netting around the branches, plus a place in which you can comfortably stand inside, and you have a serviceable hide, as long as you can handle a gun properly from within. Make sure that your head and shoulders don't stand out above the upper edge of the hide; it is best to make a basic roof from branches overlaid with foliage. If you are using camouflage netting, a good tip is to trample it into the earth before use, an exercise that takes away the 'new' appearance when it is fresh from the shop.

Loopholes in a Hide

This soldier has created a foliage hide with near total concealment. However, he has left loopholes in the front of the position for the rifle barrel; these also need to be big enough to allow unobstructed views through the telescopic sight.



Of course, there are plenty of excellent manmade hides on the market, which are no more difficult to erect than a straightforward survival tent. The fact that you may have paid good money for a hide does not mean that it will do all the hard work for you. If it isn't used intelligently, and blended properly into the background, it will simply make you stand out even more. Never underestimate animals' senses or natural wariness. Unlike you, they are locked into a battle for survival every day.

3

Traps and snares can be vital tools in hunting, saving you time and energy as well as dramatically multiplying your chances of a kill.

Traps and Snares

Traps and snares take some skill to construct, however, and much thought has to go into their location if they are to work effectively. Traps and snares are essential items for any survival hunter. They offer the prospect of remote hunting, as they are devices that can catch prey even when you are not physically present at the site of the trap. They can also multiply your hunting efforts – you can only hunt in one place at one time, but multiple traps work simultaneously at multiple locations, thereby maximizing your opportunities for a kill.

A trap or snare is especially useful if you have no weapon or if the sound of shooting could be a problem – a gunshot can result in a kill, but it can also send all other wildlife in the area into hiding for the next few hours. If you are a soldier, a gunshot might also bring the enemy to your location. Traps and snares also offer a certain degree of precision; small prey in particular can be difficult to hunt, but is more easily trapped if the correct equipment is used. Finally, traps and snares give you the possibility of acquiring food while you do other things – even sleep – and hence make for an efficient use of your available energy, reducing the amount of calories you burn up in the hunt for sustenance.

Noosing Wand

This improvised ‘noosing wand’ has various applications. It can be used to trap roosting birds (a hunting practice that requires much stealth and patience) or it can be used to control injured prey for dispatch.



So far so good. There is, however, a moral issue with using traps and snares, as – despite your best efforts – animals may lie injured and needlessly trapped for hours

instead of being dispatched quickly and humanely. Furthermore, if an active trap is lost or forgotten, it can be of serious danger to human beings, livestock or pets, particularly if it is positioned near a frequented track. It is for this reason that many countries have strict legal limitations placed upon the use of traps and snares. Make sure that you research these thoroughly before heading out into the wild, and only use authorized products. For example, in England the use of self-locking snares is prohibited, whereas free-running snares are not (in approved hunting contexts). Other considerations for using traps and snares are as follows:

- Diligently note the location of every trap. If there is a chance you might lose it, put markers on nearby trees in mud to indicate the direction of its location.
- Dismantle any trap once you have finished using it.
- Check traps every few hours or so, or at least at first or last light. This policy will ensure that animals that are caught don't suffer unnecessarily or get taken by other predators.
- Ensure that you carry the means to finish off an injured animal (such as a gun, spear or club) – depending on the type of trap, the animal is likely to be alive when you reach it.
- Don't place traps or snares on trails regularly used by people.

Traps and snares are undoubtedly one of the cruelest forms of hunting, but their efficiency and your survival can make their use essential.

Positioning Your Traps

Before considering the techniques of trap construction, you should know where to position your traps in the first place. The odds can be stacked against you here. Animals know their environments extremely well and are hypersensitive to changes, so you need to disturb the natural environment as little as possible to reduce their natural wariness.

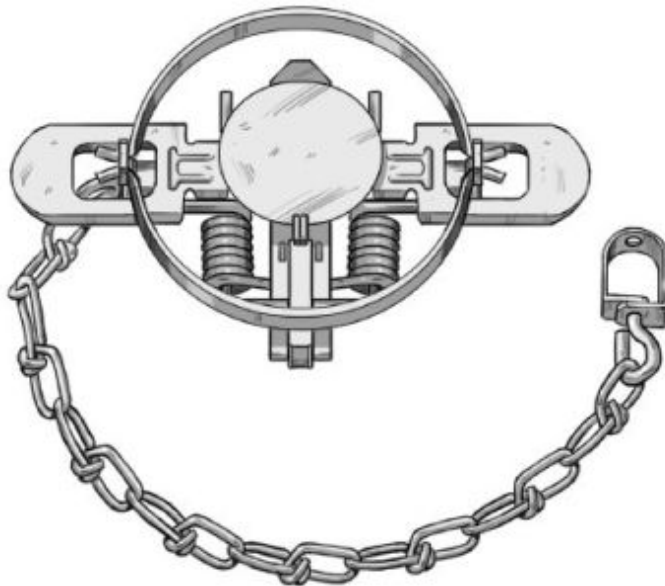
Don't disrupt an animal's lair in the process of laying a trap – the animal will sense your activity and stay safely inside even when you have gone, or take a different route to avoid anything different. When leaving their lairs, animals tend to exercise understandable caution, listening carefully and sniffing the air before coming out, and any disturbances and unfamiliar smells may cause them to stay put. Any signs of your presence will put them on the alert. A better place to lay traps is along the trails between the animal's lair and where it goes to feed or find water.

If traps continually yield no prey, move them to a different spot. Look for signs that animals have been present, such as rubbed or chewed vegetation, animal droppings,

nesting areas, tracks (see Chapter 2) or proximity to watering holes or feeding spots. Check your traps at least twice a day (first and last light are good times), or more often if possible. You can then collect your prey, reset the traps and check any empty traps or ones that have not been triggered. While on your rounds, you can also look for signs of activity, spot alternative game runs used by animals and build up knowledge of an area.

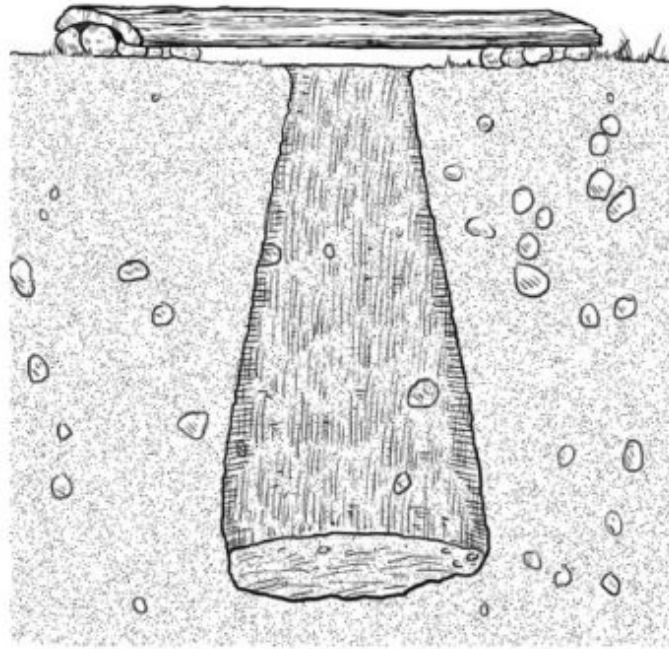
Leghold Trap

Mechanical leg-hold traps are banned in many countries for the ordeal they put captured animals through. As with any trap, make sure that it is legal to use and that you also follow responsible hunting practices, such as checking the trap regularly.



Pit Trap

In this trap, designed for small mammals and reptiles, a flared pit several feet deep is covered by a slightly raised platform. The idea is that animals crawl under the platform for shelter, but fall into the pit and are trapped there, unable to climb the inclining walls.

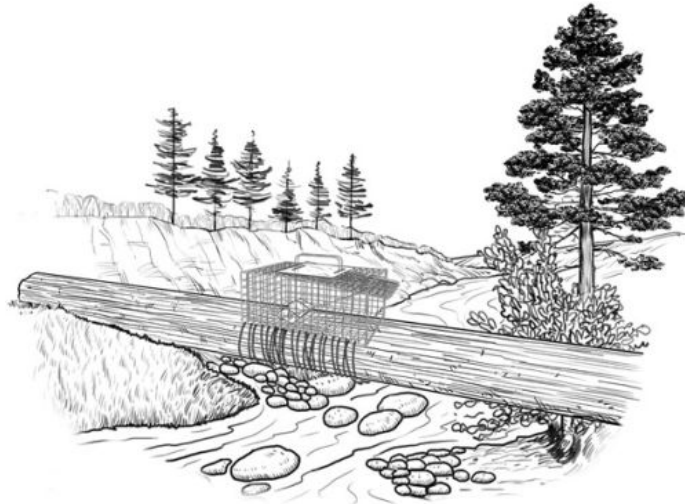


Masking Your Scent

It is critical that you mask or remove human scent from a trap. Such odours, often undetectable to humans, are an important warning sign to animals, which are unlikely to go near a scent-contaminated trap. You will naturally leave scent as you touch the trap, so – unless you can wear gloves – mask the scent of your hands with mud, urine from previous kills (never use human urine) or smoke. The smell of freshly cut vegetation is also a sign that something has recently disturbed the area, and animals will tend to avoid freshly dug dirt, so try to minimize the disruption to the environment as much as possible. If you are also hunting in the area in which you have placed your traps, be aware that gunshots will panic nearby animals and increase their wariness, so it might be best to keep keep hunting and trapping zones separate. If you can, utilize natural channels or tunnels that lead to the trap, or construct them out of surrounding vegetation. These act to funnel the animal directly into the trap. They should ideally be slightly wider than the animal's body, so that it can easily run down the channel but would find it hard to change direction.

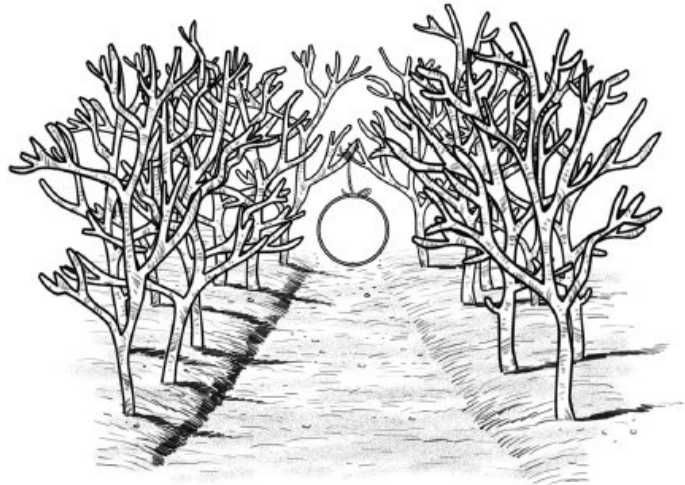
Trap Placement

This animal trap is placed on a specially constructed crossing point over a river, channeling the prey into the trap.



Channelling

‘Channelling’ refers to arranging foliage and other materials to direct an animal straight into your trap. Here, for example, a snare is positioned at the end of a steadily narrowing avenue of plants.



As final preparation for trapping, read up as much as you can about your prey. This information will help you decide which trap is best for your environment and situation, and where to lay your traps. Pick up any information you can about the prey types in a certain area, including breeding seasons, typical habitat, lair design, feeding habits and seasonal variations in appearance. All such factual nuggets might assist you in refining your trapping technique.

Official Department of Environment, Food and Rural Affairs (DEFRA) – Advice on Removing Scent from Snares

Some have recommended the following procedures to minimize chances of snare detection. The manufacturer's lubricant, the scent of the lubricant and the shine of new snares are removed by placing them in a large pan with boiling water and a small amount of automatic (low froth) washing powder for one hour, removing any residue on the surface. After one hour the snares should be boiled for another hour in a pan of boiling water with chips of oak bark, oak leaves and tea (bags or leaves) and be left to stand in the cooling water for 24 hours. This will stain the snares and disguise them, making them less detectable to foxes and rabbits.

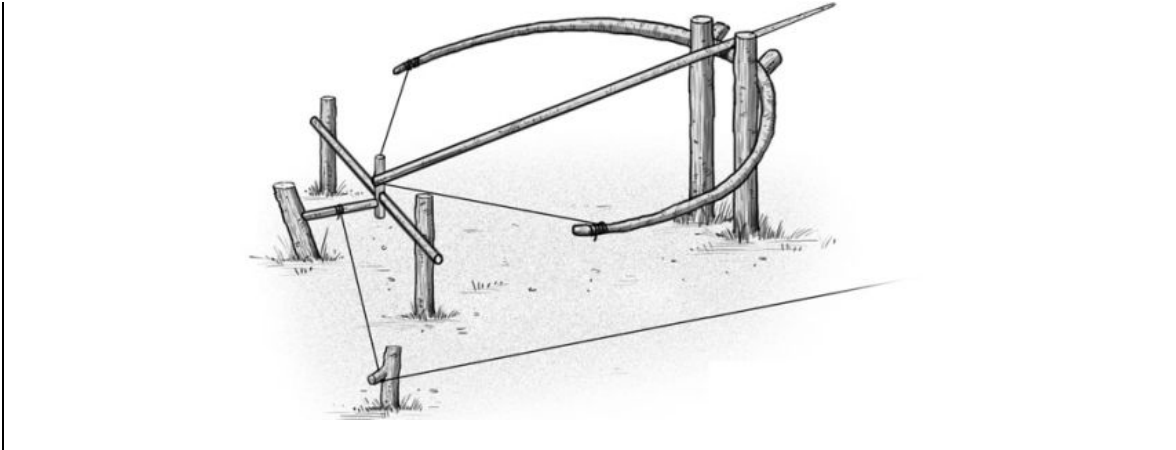
To re-wax snares, paraffin wax, which has very little odour, should be used after the boiling process. Mineral oil or aerosol lubricant should not be used. Snares handled regularly for resetting should be re-boiled regularly to remove the scent of humans. Once snares are prepared for use they should be handled as little as possible and kept away from sources of strong scents.

New snares should be re-boiled and re-located to another site after their first week or so of use. If there is evidence of a near miss, such as the snare being knocked or drawn up and fur left behind, then the snare should be replaced with a fresh, scent-free one a few metres along the trail.

– DEFRA, DEFRA code of practice on the use of snares in fox and rabbit control, 2005

Bow Trap

This bow trap holds a bow and arrow under tension until an animal activates the tripwire. Placement is critical here – the arrow's flight must intersect precisely with the position of the animal.



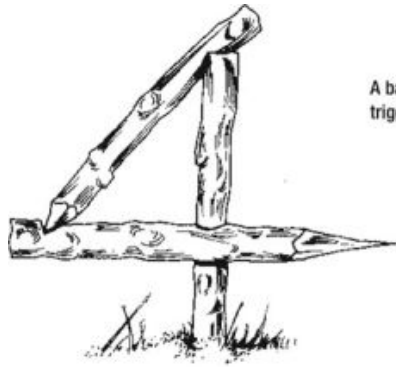
Building Traps

In this chapter we will place our main focus on the process of constructing traps and snares from natural materials, a skill that is a standard part of Special Forces survival training. Yet traps are obviously available direct from commercial suppliers. These traps have the advantage of being manufactured to high standards (for models of decent quality at least), and are built specifically for a certain type of prey. When you order your trap over the internet from abroad, however, first ensure that the device complies with the law in your home country.

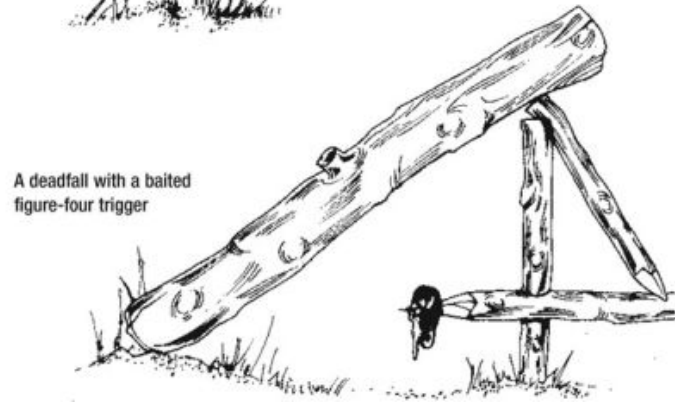
If you have little experience of making or using traps, focus your attentions on the most straightforward kind of device, one that is relatively easy to assemble and use. From the outset, be realistic about what you hope to achieve. Do not assume that every trap will yield a catch. There are many reasons why traps do not always work, ranging from faulty trigger mechanisms to a general lack of prey in the region. The most important tool you have, therefore, is patience. Your traps will, if sensibly and appropriately applied, eventually bring you food.

Types of Trap

Although there are common types of deadfall and snare traps, feel free to use your ingenuity to create the most efficient trap for your prey.



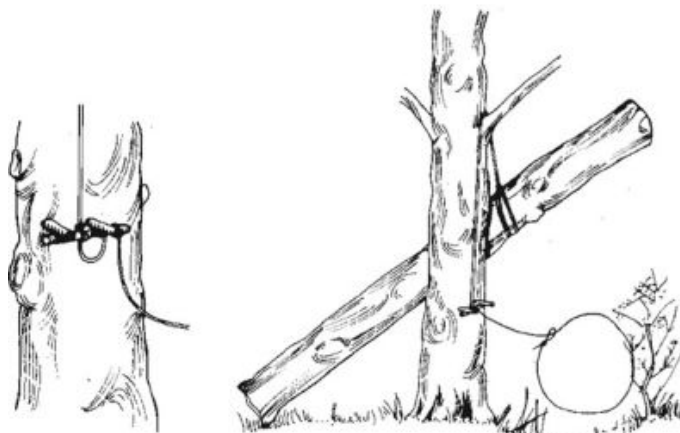
A basic figure-four trigger mechanism



A deadfall with a baited figure-four trigger



A deadfall with a tripline release



A deadfall and snare combination

Safety Note

Traps, by their nature, can be deadly to people as well as animals. Exercise caution when building and using any sort of trap, and never put yourself in the impact area, even for a moment, especially when constructing large deadfall or spear traps. Never leave traps set up if you are moving to another area. If you are not taking them with you, destroy them or disengage the mechanism so that they are rendered harmless. Always be responsible in your use of traps.

The more basic traps can be constructed in minutes, enabling you to set several quickly and then allow you the freedom to hunt, forage or pursue other essential survival tasks. Your trap should aim to kill the animal as quickly as possible, not to simply injure it, or at least hold it securely until you return. Many traps can be made from wood and natural cordage, although having high-quality thin rope, string or wire (ideally three- or four-strand flexible brass wire) provides you with the greatest chances of a catch. If you are using wooden branches in the trap, dead wood is too brittle – you need a springy, bendy wood that is hard to break, such as hazel.

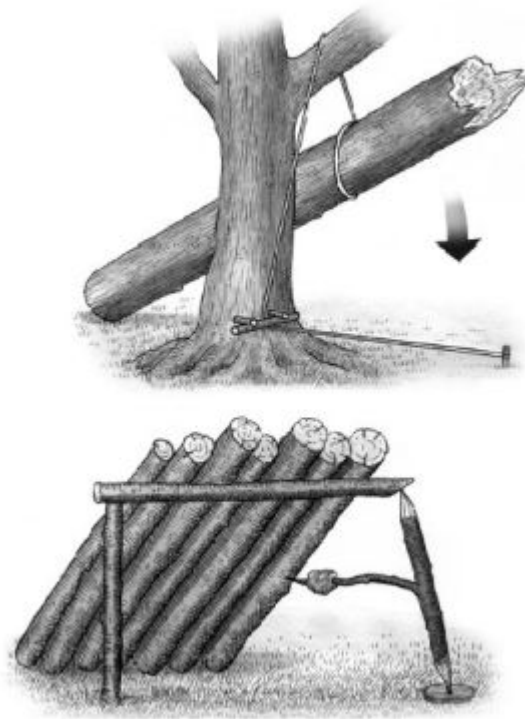
Deadfall Traps

Deadfall traps work on the principle of catching prey by causing something heavy to fall on it, such as a large log or stone, when the trap is activated by a tripwire or trigger mechanism. The impact is often enough to kill the animal, or at least stun or injure it.

Deadfall traps are best used for medium-sized prey, such as small deer, foxes, pigs, badgers, geese or ducks. Do not be tempted to use an overly large or heavy weight, as this can crush the meat and even the bones, making the animal unusable as a source of food.

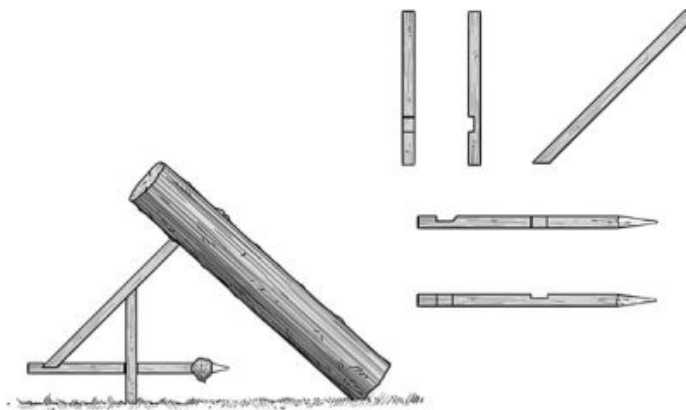
Deadfall Traps

The deadfall trap can be based around a single heavy object, such as a tree trunk (top), or multiple lighter objects (bottom) to deliver a broader impact area.



Making a Deadfall Trap

In this illustration we see the components of a deadfall trap trigger (opposite page), plus the complete trap in its assembled state. Note the position of the bait, well under the arc of fall of the weight.

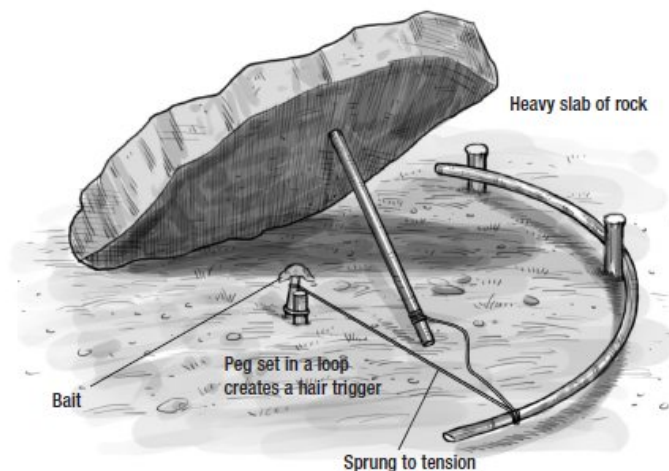


Various types of deadfall traps are pictured in this chapter, with advice on their construction. The baited balance log trap is one of the simplest to construct and rebuild. It essentially consists of a log balanced on a pointed stick, the stick featuring a

protruding branch baited on the end beneath the inside corner of the log's angle. The impact zone from this trap can be unpredictable, however, so you can produce more accurate results by using a tripwire. The wire is tied to a stake, fed under a holding mechanism set into a tree trunk and tied to the deadfall weight itself. When an animal hits the tripwire, the holding mechanism is released and the log falls quickly to the target. You can improve the efficiency of this trap by using multiple logs stacked along a balance bar, broadening the impact area.

Spring Deadfall Trap

In this deadfall trap, a branch held under tension can deliver a more rapid movement of the weight-support branch.



US Army Tip: Paiute Deadfall

The Paiute deadfall uses a piece of cordage and a catch stick. Tie one end of a piece of cordage to the lower end of the diagonal stick. Tie the other end of the cordage to another stick about 5cm (2in) long. This 5cm stick is the catch stick. Bring the cord halfway around the vertical stick with the catch stick at a 90-degree angle. Place the bait stick with one end against the drop weight, or a peg driven into the ground, and the other against the catch stick. When a prey disturbs the bait stick, it falls free, releasing the catch stick. As the diagonal stick flies up, the weight falls, crushing the prey.

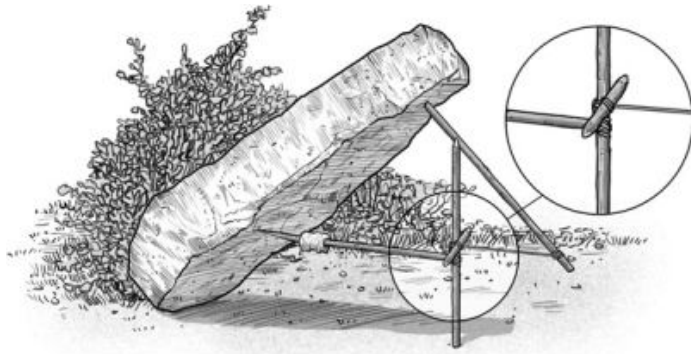
The efficiency of deadfall traps often depends upon the quality of the trigger mechanism. The trigger should be secure enough to hold the trap in place through rain and wind, but sensitive enough to be triggered instantly by the passage of a prey animal or its removal of the bait. A simple trigger for a balanced deadfall weight can be constructed as follows:

- 1) Select three branches: a support stake, bait bar and release bar (see illustration for guidance).
- 2) Cut a square slot halfway down the support stake and a corresponding slot halfway along the bait bar. The two branches should now slot together at a right angle.
- 3) Sharpen the bait bar at one end to take the bait, and create a notch in what will be the upper surface of the bar at the other end.
- 4) The release bar is modified at two points. It is sharpened at one end – this end will fit into the notch on the end of the bait bar – and it has an angle cut in the centre to balance atop the support stake.
- 5) To assemble the trap itself, arrange the three branches and the deadfall weight as shown in the illustration. Note how the bait is positioned well under the angle of the weight.

The illustrations in this chapter (see pp120–128) show how you can innovate in the design of deadfall traps. Always approach the victims of deadfall traps with caution, however. Unlike snare traps, they are typically not restrained by the trap even if injured (unless they are pinned under the weight), and a seemingly dead animal could suddenly revive and fight for its life as you approach it.

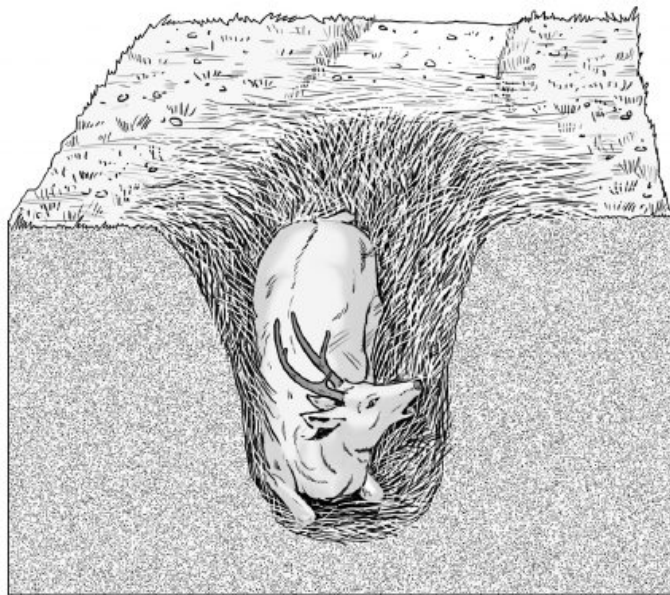
Paiute Deadfall

This type of trap is known as the Paiute Deadfall, a traditional trap used by the Paiute Native Americans. It uses a piece of cordage and a catch stick in its mechanism. When a prey animal disturbs the bait stick, it falls free, releasing the catch stick.



Animal Pit

Pits have been used for centuries to catch animals. Creatures can be either driven into the pit, or fall through a light covering of foliage. Make sure that the pit is deep enough for the prey type – many animals can jump to impressive heights when trapped or scared.



Spear Traps

Spear traps kill via sharpened stakes or similar penetrative weapons. In some spear trap designs, the spears can actually be set in a static arrangement. Typically this involves placing them in the bottom of a pit, the pit opening covered over with a light fabric of branches, leaves and soil. The theory is that an animal will drop through the covering and into the pit, impaling itself on the spikes below. Trapping pits, with or

without spikes, have been used since prehistoric times by hunters, and are naturally suited to larger animals such as pigs, elk, reindeer or wolves. They take significant effort in the construction, however, and so are only suitable if you a) have the energy; and b) intend to stay in the locale for some time.

Types of Mechanisms

Spear traps are more commonly designed around a delivery mechanism, typically a springy branch held under tension (before release) by a trigger mechanism. This type of trap is especially suited to killing wild pigs, goats and deer, or any medium to large animal. Attaching multiple spears to your trigger increases the chances of the animal being killed straight away. The spears themselves should be at least 15cm (6in) long to penetrate the animal. Take great care when constructing and using spear traps, and always approach them from behind and away from the arc of the spear.

The biggest problem with making a good spear trap is targeting. Position the bait at the point the spear will swipe through when released. To make a basic spear trap, find an animal route with a tree growing by the side. The tree should have long, whippy branches that extend over the track, and which can be used as your spear delivery system. (If the tree does not have appropriate branches, then simply use a bough cut from another tree and tie it onto the tree trunk very firmly.) Tie sharpened wooden spikes to the release branch and a long string or cord to the branch's tip. At the other end of the cord, affix a short piece of wood, with an angled notch cut into it (this serves as the trigger).

Then, bend the branch back under tension, holding it in place by taking the string around the trunk and hooking the trigger into a correspondingly notched stake stick, driven firmly into the ground. Attach bait firmly to the trigger. The trap will release the branch when an animal tries to eat the bait and dislodges the trigger.

If the spear is accurately aligned, it should drive straight into the animal's side, killing it quickly. If the animal is wounded and escapes, you will need to follow the blood trail as described in the section on deer stalking.

General Rules When Making Traps

- Avoid excessive handling of the trap, as this will leave your scent on it, and keep the trap away from campfires and foods for the same reason. Smear your hand with mud during construction to mask your scent.

- Mark the direction to a trap with tall branches or markings on trees to avoid losing the device, something especially important in snowy conditions.
- Don't stand or work on the animal trail you are trapping. Instead, keep to one side to make a minimal disturbance.
- If you have to break branches, smear the white exposed wood with mud to camouflage your work.
- Try placing some bait in a potential trapping site. If it disappears the location is suitable for the trap.

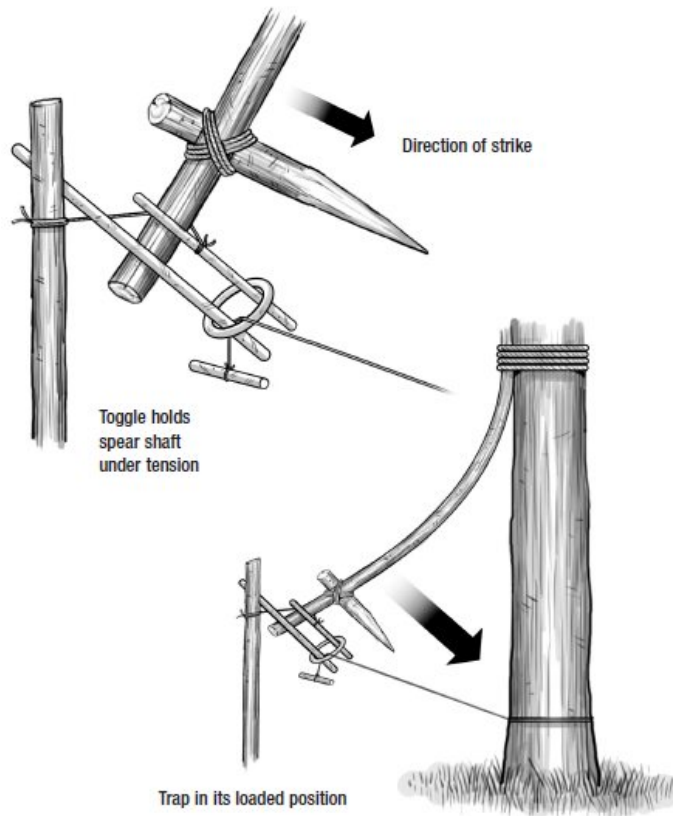
There are many variations of spear trap. The spears can be arranged to hack down from above or sweep horizontally across the ground. Spears can even be attached to deadfall traps for added lethality. If you have to dismantle your own trap, however, take special care – if a trap can kill a large wild pig, it can also kill you.

Snares

Snares are intended to catch and hold animals. Sometimes, the snare delivers a kill, typically by strangulation (although less humanely by blood loss), but often it simply holds the animal captive until you return to finish it off. Snares can be very simple to construct and use, and are safer than deadfall or spear traps. They work especially well for small to medium animals, such as rabbits, foxes, badgers or various types of wild dog. Some can be tailored to catch small deer or large cats, using leg snares. (Note that badgers and their setts are protected under the Protection of Badgers Act 1992, which makes it illegal to kill, injure or take badgers or to interfere with a badger sett.)

Spring Spear Trap

Spear traps are ideal for tackling substantial and dangerous prey, such as wild pigs. The spear impact point should, ideally, be at the animal's chest height.



Snare Wire

Snare wires need to be kept in good condition to perform properly. Don't wrap up the wire too tightly in storage, and apply a thin layer of grease to any rustable parts. For humane and legal reasons, it is better to use free-running snares rather than self-tightening varieties.



The key element of any snare is, of course, wire, string or a thin rope. You could always use tough, woven plant material or animal ligaments if you have nothing else, but the material needs to be both flexible and very strong if it is to perform the job well. Loop the snare wire around your (protected) wrist and pull hard – if it breaks, then it is unlikely to hold a struggling animal.

Snare wires are typically divided into two types: free-running or self-locking. A free-running wire tightens when it is pulled or loosens when the pressure is relaxed. Self-locking snares (usually commercially produced types), however, feature a locking device that tightens constantly as the animal struggles, and doesn't loosen. There are ethical considerations when using self-tightening snares, as the effect on the animal can be horrific as it struggles, and the wire keeps tightening through the flesh and right into bone. Unless you really have no other option, use free-running snares.

The simplest snare is a basic snare loop. A snare loop is made by taking a length of wire with a running eye or knotted loop at one end, through which the other end is passed to form a noose of wire. The loose end is then tethered to a stake, tree stump or heavy rock, which holds the snare and the trapped animal in place until it is collected. Twigs can be used to hold the loop off the ground, positioning it at the right height to snare an animal as it moves along a trail or outside a den hole.

Spring Snare

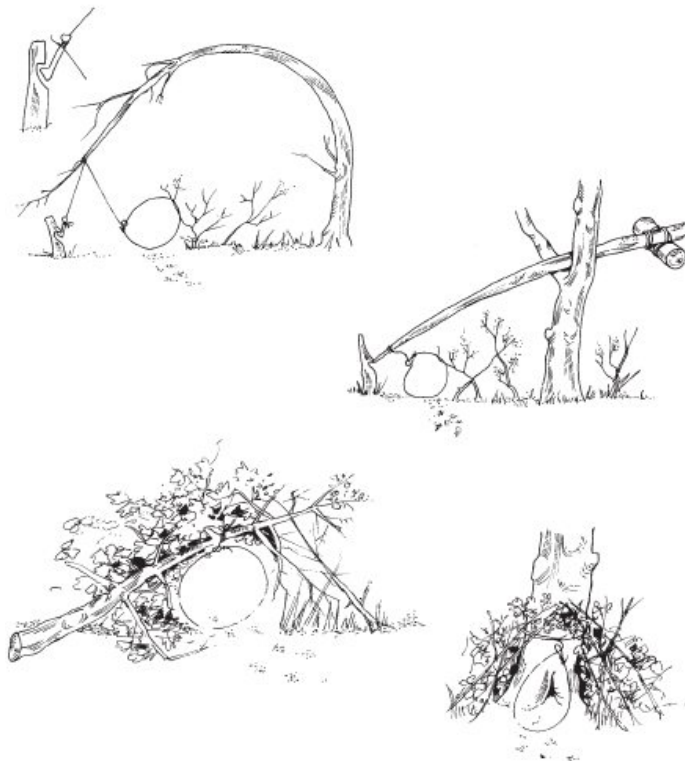
Basic snare loops work reasonably well, but they run the risk of the animal freeing itself once caught, or being taken by a predator. By contrast a spring snare (also known as a 'twitch-up' snare) keeps the animal suspended and immobilized off the ground, and therefore it greatly reduces the chances of some other predator finding and taking your catch before you can get to it. Apply tension to a springy branch by tying it to a notched trigger mechanism, which is in turn tied to your snare loop. When the animal gets caught in the noose, the trigger releases, the tension in the branch is released and draws the animal into the air, where it is suspended. Spring snares can also work with bait, which should be strung on one side of the noose. When the animal puts its head through the noose to retrieve the bait, the notched trigger is disengaged.

Double-ended and trapeze snares work in the same way as regular spring snares, but they increase your chances of catching something by covering more trails at the same time. Two sets of nooses are hung so that the animal trying to get to the bait will

be covered from any direction it approaches, thus maximizing your chances of a catch. Again, if you do lay multiple snares, keep a log of their location so that you do not forget about any, potentially leaving animals trapped or injured, or leaving traps ready to go off once you have left the area.

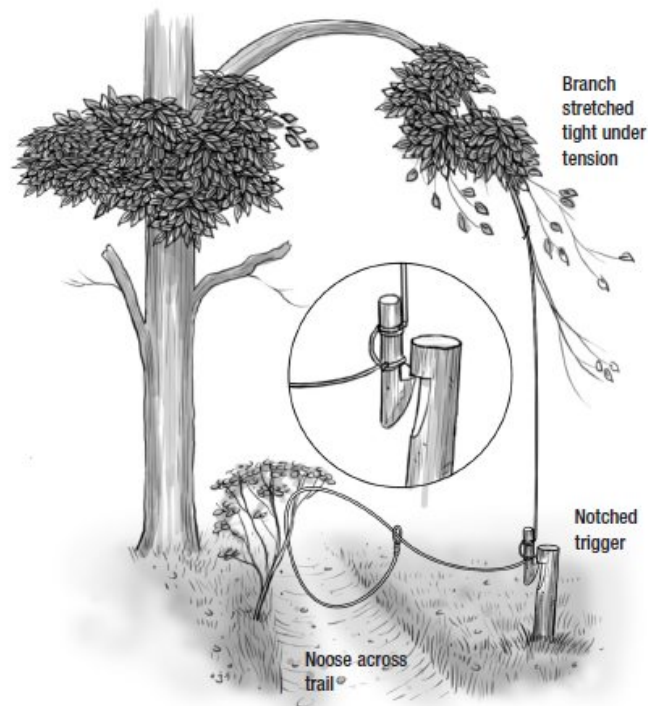
Snare Configurations

The top two images here show different methods of creating a spring snare, including a counterweight variety (right). The bottom images illustrate good ways of channelling the prey into the trap.



Spring Snare

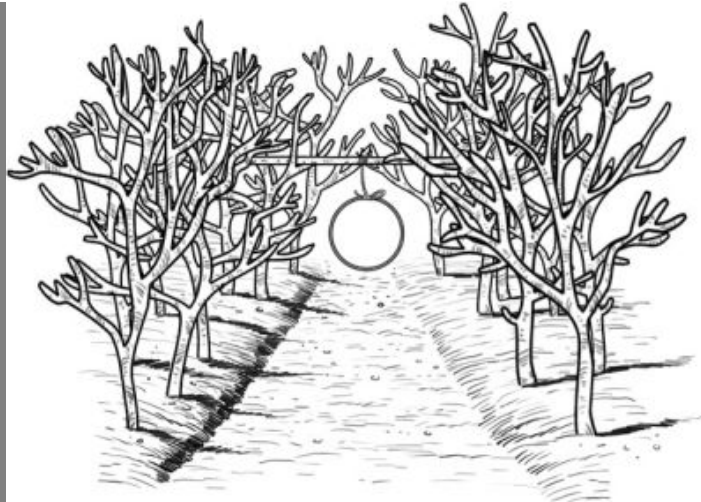
The spring snare is a classic trap type. Ensure that the trigger mechanism is not notched so firmly that the animal eats the bait without activating the trap. Also ensure that the trap not only holds the animal off the ground, but also away from the tree.



US Army Tips: Drag Noose

Use a drag noose on an animal run. Place forked sticks on either side of the run and lay a sturdy crossmember across them. Tie the noose to the crossmember and hang it at a height above the animal's head. (Nooses designed to catch by the head should never be low enough for the prey to step into with a foot.) As the noose tightens around the animal's neck, the animal pulls the crossmember from the forked sticks and drags it along. The surrounding vegetation quickly catches the crossmember and the animal becomes entangled.

– US Army, FM 21-76, *US Army Survival Manual*, 1970



DEFRA Advice on Snaring Rabbits

Close physical inspection of the site and fieldcraft will help determine whether non-targets are also using the site. As well as the actual sighting of rabbits, signs that indicate their presence include:

- Burrows
- Rabbit-sized holes in fencing
- Clearly defined rabbit-sized runs
- Latrines of rabbit droppings

Rabbit snares should be set on well-used rabbit runs, in short vegetation, close to the harbourage from which they gain access to crops. Snares must not be set in sites cluttered by obstacles such as saplings, hedges, walls, fences or gates, which increase the risk of injury. Sites that pose the risk of fatal entanglement should be avoided.

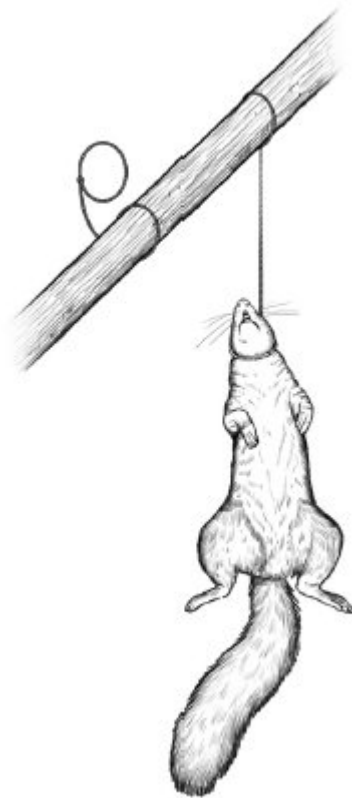
Spring snares can also be used as leg nooses if you want to snare larger animals such as deer or even bear. These trap the animal by the leg as it approaches the bait and hold it there for your return. You will need extremely heavy-duty wire to snare such animals, with the restrained end tied to a near-immovable object, such as a large tree.

Squirrel Pole

Snare-trapping principles can be applied even to tree-dwelling animals such as squirrels. Find a long pole or branch and tie a row of snares along its length. Then lean the branch against a tree in an area with heavy squirrel activity. The squirrels may run up the pole to get to the top of a tree, and hence are likely to run straight into the nooses, which will hold them by the neck as they fall off the pole and become immobilized. The nooses (wire works best, but a strong, stiff string or cord will also serve the purpose) should be about 5–6cm (1.9–2.4in) in diameter. Ensure that there are no nooses close to the bottom or top of the pole, as the squirrel will be able to get a foothold and chew through the wire. As with all traps, using multiple poles will increase your catch.

Squirrel Pole

A squirrel pole consists of a series of small nooses placed along a long branch. The pole is positioned in a tree, and when the squirrels run along it, they hopefully become entangled in one of the nooses, and hang there for you to retrieve later.



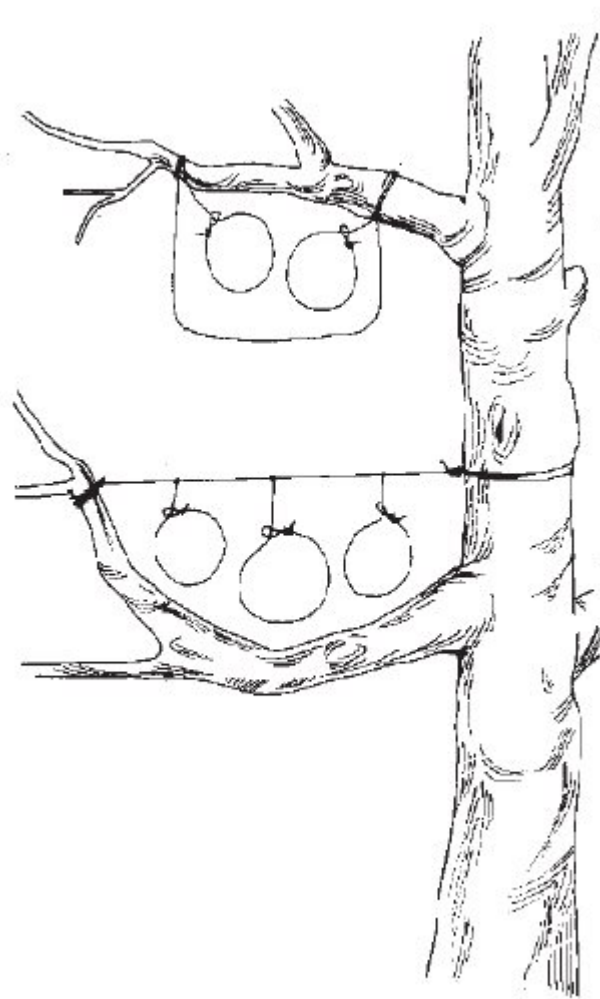
Bird Traps

Traps and snares make an excellent method of catching birds, which may prove difficult or time-consuming to hunt by other methods. Wires can be stretched across bird flight paths to injure or hold birds (nets can also work, although tend to be very labour intensive to make). Light snares can be effective when used around roosting sites, or when hung over streams to trap birds when they are looking for food.

(Choose areas with rushes or water reeds to place the nooses.) Noose sticks (which can also be used for animals emerging from their burrows or habitats) are another option. Tie several nooses onto a stick or branch (use fine wire, such as fishing line or horsehair), leaving around 25cm (10in) between them. The nooses should have a diameter of 1.25–2.5cm (0.5–1in). Place the stick near roosting or nesting spots, where the birds may be caught when they land. (You can, of course, tie nooses directly onto a perch branch, if you can reach it easily.) Trapped birds will attract other birds, so the more nooses you use, the more birds may be caught.

Bird Snares

Birds can also be snared, even on the wing. These snares hang down into gaps that birds might fly through and become ensnared. Simple lengths of fine wire can also work: they injure the birds when struck, and the injured birds then fall to the ground for collection.



Tips for Trapping Birds

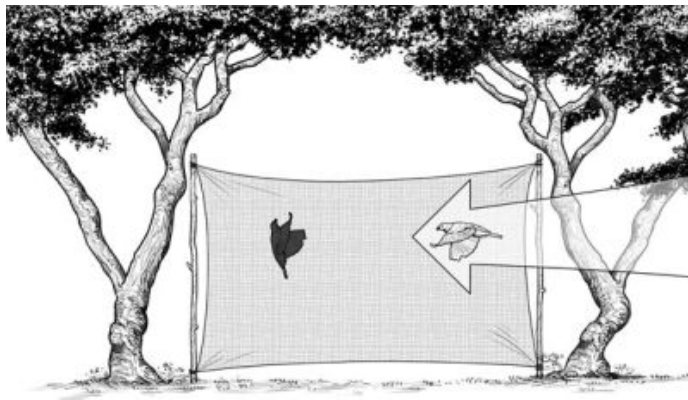
The following are some useful methods for catching birds:

- Bird lime – boil holly leaves and grain in water to produce a glue-like substance. Spread the birdlime along branches commonly used by birds for perching; when the birds land here they will become stuck.
- Put fishhooks into pieces of bird food – remember to secure the fishhook to a branch or other anchor using fishing line.
- Tie straight lines of fishing wire across flight paths commonly taken by birds – flying birds may hit the wires and fall injured to the ground for your collection.

It must be noted that in certain places (Europe, for example), use of traps, nets and bird lime are forbidden. Birds should ideally not be trapped when breeding or during spring migration and there are many species of wild birds that should never be hunted or trapped. As with hunting animals, check your state or country guidelines beforehand.

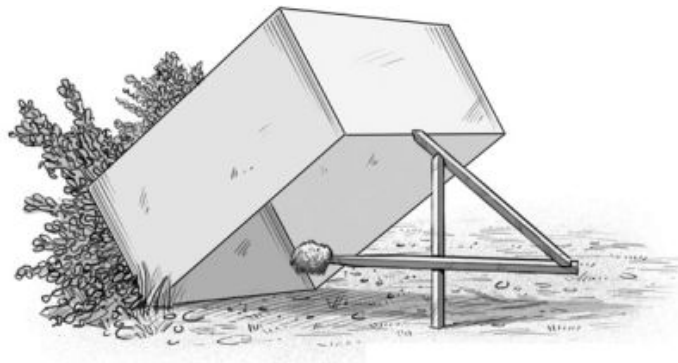
Bird Net

You can use a large net, strung between two trees, to ensnare flying birds. The net needs to be made of fine wires rather than thick rope, because if it appears to be too solid, birds will naturally avoid it and take safer routes through the trees. You could, however, string birds across these routes as well.



Box Trap

For catching prey live, you can use a version of the deadfall trap, replacing the killing weight with an upturned box. This sort of trap is only really suitable for small birds and mammals, however.



US Army Tip: Use of Bait

A baited trap can actually draw animals to it. The bait should be something the animal knows. This bait, however, should not be so readily available in the immediate area that the animal can get it close by. For example, baiting a trap with corn in the middle of a cornfield would not be likely to work. Likewise, if corn is not grown in the region, a corn-baited trap may arouse an animal's curiosity and keep it alerted while it ponders the strange food. Under such circumstances it may not go for the bait. One bait that works well on small mammals is the peanut butter from a meal, ready-to-eat (MRE) ration. Salt is also a good bait. When using such baits, scatter bits of it around the trap to give the prey a chance to sample it and develop a craving for it. The animal will then overcome some of its caution before it gets to the trap. If you set and bait a trap for one species but another species takes the bait without being caught, try to determine what the animal was. Then set a proper trap for that animal, using the same bait.

– US Army, FM 21-76, *US Army Survival Manual*, 1970, p.85

Simple figure-four traps (similar to the deadfall trap) can be fashioned from notched sticks slotted together and baited, with a rock, net or box in place to kill or trap the bird. Birds, unlike animals, are less able to escape from a net or box, so these can be used if you would prefer to dispatch the bird yourself later. Always remember to check traps regularly to avoid trapped birds being taken by other predators.

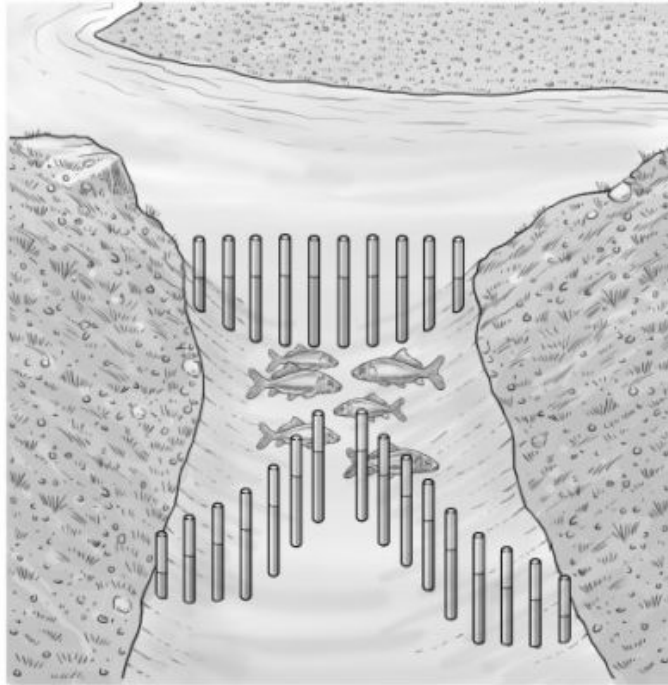
Bait

Bait works by attracting animals or birds (by sight, smell or a combination of both) to your trap or snare. Use of bait can vastly increase the amount of prey you catch. You can also tailor your bait to focus on catching certain species, while minimizing the chances of the wrong type of animal being trapped or killed needlessly. For example, meat or fish will attract carnivores, while fruit, vegetables and grains will attract omnivores. While you may be reluctant to use up precious food sources on bait in a survival situation, baited traps will reap more returns. They will also, through their kills, provide additional sources of bait – scraps of flesh, blood, urine and glands can all be used for attracting animals to further traps.

Fish Trap

In this fish trap, the hunter uses sticks embedded in the riverbed to channel the fish through a narrow aperture into a holding area. Note that

the current must flow into the mouth of the funnel, making it harder for the fish to swim back out of the trap.



The following are some guidelines on the use of bait:

- Animals such as rabbits and squirrels will be attracted to vegetables, seeds and bread.
- Pigs go for grain and corn.
- Foxes and dogs will be attracted by meat, fish or entrails.
- Foxes and dogs will also sniff animal (not human) urine.
- Beavers and deer are attracted to scent glands, especially during the mating season.
- Many animals are attracted by peanut butter, so take a jar if you are planning to use traps. (It is also a good food source if you get hungry.)

Fish Traps

Land-dwelling animals are not the only prey that can be caught by trapping.

Surprisingly large amounts of fish can be caught in purpose-designed traps. Netting is an obvious option, but it requires the resources and expertise to make the net. If you have one, suspend it from a long pole over a narrow part of a river or stream, weighting the bottom of it with rocks so it hangs straight down in the water. The net

could fill up with fish in a short space of time as they are carried into the net by the current, so check it every half hour or so.

The principal of channeling fish into a trap is applicable to several different types of trap. Cut the drinking end off a large plastic drinking bottle and insert the end, inverted, into the body of the bottle. This simple device is now a basic fish trap for small species of fish – placed in a river, with some bait in the bottom. Although fish can swim quite easily into the trap, getting out of it is another matter, and retrieving the fish is a simple matter of removing the bottle from the river and emptying them out.

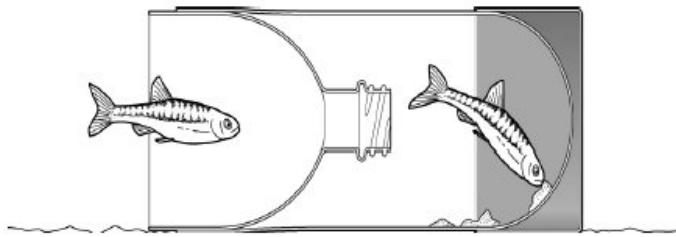
A far more advanced system working on the same principles is the basket trap. Essentially this is a device configured in much the same way as the bottle trap, but woven from reeds or other materials around a hooped framework. The basket trap obviously takes some craftsmanship to make, but its advantage is that it can be scaled up to whatever types of fish you wish to catch. As with the bottle trap, the basket trap should be placed so that its mouth is facing into the flow of the current, and you can use rocks around it to channel fish straight into the device.

Around tidal waters, a fish corral is a practical method for catching reasonable quantities of fish. At low tide, construct a wall of rocks arching out from the shore and back again. At high tide, the wall will be submerged but when the tide drops again, fish might be trapped in the wall perimeter, and can be scooped out with a net.

Trapping is as much about innovation as rules, so don't be afraid of experimenting with your own designs. If you do, just be sure that the device is fit for the job and can provide you with a convenient meal without inflicting unnecessary suffering on the prey.

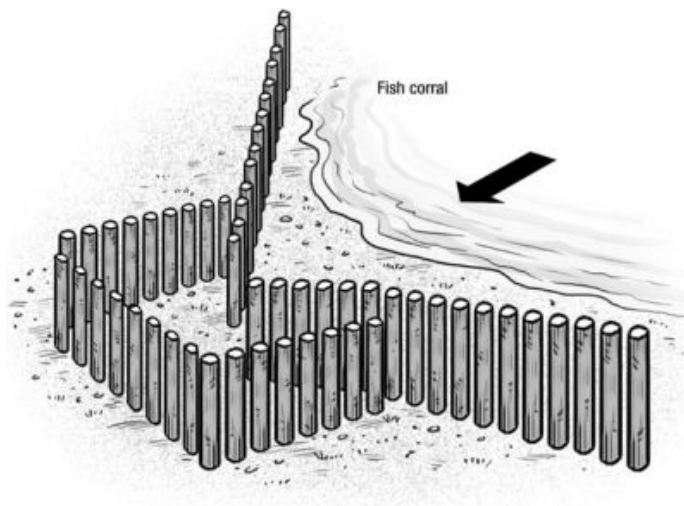
Bottle Trap

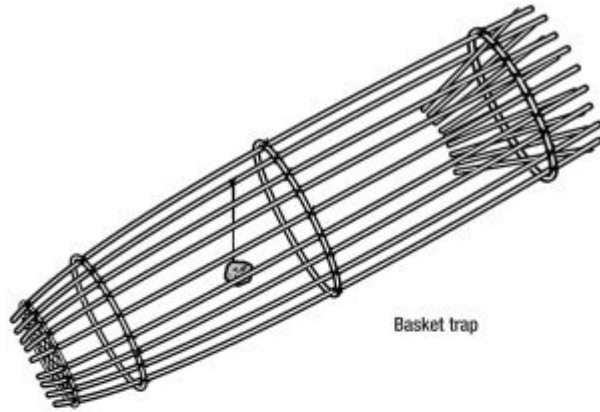
The bottle trap works on similar principles to the fish trap illustration on p.149, except that this device can be constructed simply from a common plastic drinks bottle, the neck and nozzle cut off and inverted inside the bottle body.



Types of Fish Trap

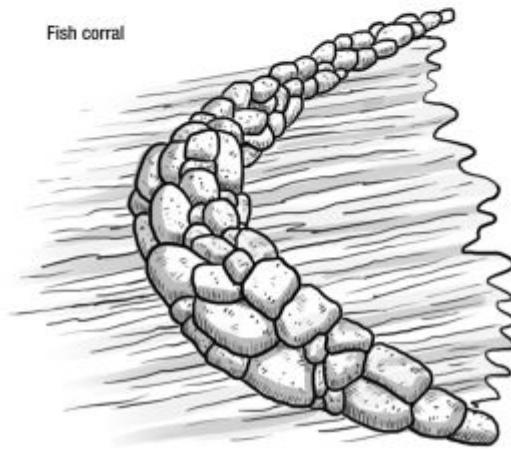
Fish corral traps work on the basis of trapping fish in a confined space. The trap shown on this page works by allowing the fish to swim through the funnel-shaped trap, while the coastal version opposite traps fish in a rocky enclosure when the tide goes out. The basket trap is a more advanced option, requiring a good supply of flexible thin branches and some cordage.





Basket trap

Fish corral



Hunting with Dogs

Gun dogs can be formidable allies when it comes to hunting in the field. Depending on the breed, a good gun dog can track down prey, flush it out of hiding, retrieve kills and even perform the entire hunt process itself. The use of dogs in hunting is an ancient human/animal relationship. Archaeological evidence suggests that dogs were cooperating with hunters at least 20,000 years ago, and by 9000 BCE we have visual evidence of this – cave drawings depict dogs working alongside hunters to run down large prey such as elk and deer. These paintings also suggest that some breeds of dog were more suited to the task than others. Mastiffs, greyhounds, pointers and wolf-like breeds are shown; mastiffs also appear in hunting art from ancient Egypt and southern Europe.

Over time, and as the agricultural revolution rendered hunting a more peripheral social activity, the function of dogs became less about hunting and more about guarding or companionship.

However, hunting as a sport continues to this day, and the natural instinct to hunt and track is still within many popular breeds. Properly trained, a good hunting dog can radically improve the chances of a kill in the field.

Tracker Dogs

Tracker dogs are those canines with natural physical attributes suited to tracking and hunting animals (or people). The animal should be a fit specimen, as it may have to maintain a pursuit over several hours.



The Right Breed

Today there are no fewer than 161 dog breeds recognized by the American Kennel Club (AKC). The physical diversity within this range of breeds is impressive, with each type of dog displaying different physical characteristics and temperament (although the latter can be significantly controlled in any dog by good training). In addition to recognized breeds, there is also the near infinite diversity of the mongrel community, dogs that can bring together the combined characters of certain breeds (sometimes usefully so).

Out of this spectrum of animal types, there are dogs in which natural hunting instincts have been refined, and physiques appropriately enhanced, by selective breeding. Generically referred to as 'sporting dogs', or sometimes 'gun dogs', each of these breeds offers a specific package of aptitudes and physical ability for the modern-day hunter. In the same way as choosing a gun depends on the type of hunting you want to perform, choosing a sporting dog involves weighing up the pros and cons of each breed, and selecting one that will work efficiently for you as well as being a good companion either out in the field or in the home. Remember that even if you buy a dog for hunting, you are responsible for every aspect of its wellbeing, and it must be fully socialized with both people of all ages (especially the other members of your family) and with other dogs. It is a simple truism that if you look after your dog, it will look after you.

American Kennel Club – Recognized Sporting Breeds

- American water spaniel
- Boykin spaniel
- Brittany spaniel
- Chesapeake Bay retriever
- Clumber spaniel
- Cocker spaniel
- Curly-coated retriever
- English cocker spaniel
- English setter
- English springer spaniel
- Field spaniel
- Flat-coated retriever
- German shorthaired pointer
- German wirehaired pointer
- Golden retriever
- Golden setter
- Irish setter
- Irish red and white setter
- Irish water spaniel
- Labrador retriever
- Nova Scotia duck trolling retriever
- Pointer
- Spinone Italiano
- Sussex spaniel
- Vizsla
- Weimaraner
- Welsh springer spaniel
- Wirehaired pointing griffon

The Hunting Type

Pictured here are three different types of hunting dog, each with contrasting performance characteristics. Spaniels are classically adept at flushing birds from undergrowth, while labradors at easily trained to collect downed prey. Cross-breed hounds (lurchers), by contrast, use their tremendous speed to run down fast-moving ground animals.



Labrador – Retrieving



Cross-breed hound (lurcher) – Chasing

Here, we will look at the basic categories of sporting dogs and some of the breeds within. Before doing so, it is worth reminding ourselves that the instinct to hunt is present, to some degree, in almost all dogs. Naturally some breeds of animal are patently unsuited to hunting work – such as animals of the toy dog group (more likely to become the prey rather than predator). Spend time in the field with almost any other dog, however, and you may recognize qualities that can be used for hunting, once harnessed with a little training.

Pointing Dogs

Pointing dogs, as their name visually describes, are dogs that literally point their bodies towards game when they detect its presence. The posture is classic – the body goes rigid, eyes fastened on the point of detection. Depending on the breed, the dog might flatten the back of its neck and push its tail straight out; it might lift one front paw in expectation of a charge; the overall posture can be upright or crouched.

Pointing dogs serve the hunter by giving him or her information about where prey is and how it will behave. Most practically, once the hunter knows where the prey is located, he can prepare to take the shot when it is flushed from cover. For example, if the dog points at the base of a thick bush, the hunter can expect a bird to break for an open patch of sky. Usefully, the pointing breeds are often good retrievers (see below), so they can collect prey once it has been brought down. Classic pointing breeds are as follows:

- Brittany spaniel
- English pointer
- English setter
- German shorthaired pointer
- German wirehaired pointer
- Gordon setter
- Hungarian vizsla
- Irish setter
- Weimaraner
- Wirehaired pointing griffon

As with all hunting dogs, pointers need to be used in the correct context and for the correct prey. They are primarily suited to hunting birds that don't immediately fly away when danger is detected, such as grouse, pheasant, quail, snipe and woodcock. Pointers need to move in harmony with the hunter, neither sticking too close or wandering too far, and they need to be undistracted by the many other stimuli around

them. They should also respond quickly to directional commands, so the hunter can direct them to explore specific parts of a terrain.

Dog Boots

Although they look a little eccentric, dog boots can be practical if your dog is hunting over thorn-covered or sharp, rocky ground.



Retrieving Dogs

The classic function of the retriever is to collect downed prey, especially game birds that fall into water or some distance from the point at which they were shot. Retrievers are especially useful for the hunter because they both reduce the chances of the prey being lost after it is shot, and they save the hunter's energy. Classic retriever breeds include:

- American water spaniel
- Chesapeake Bay retriever
- Curl-coated/flat-coated retrievers
- Golden retriever
- Irish water spaniel
- Labrador retriever

Retrievers need to be strong and energetic dogs, and unafraid of water. They must also exhibit steady characters that can wait patiently by the side of their owner, often for long periods, before finally being sent out to collect game. This more settled part of their character often makes the retriever breeds exceptionally good family pets.

Flushing Dogs

The purpose of the flushing dog is to find prey and flush it out of its cover. Spaniels are the breed most frequently used as flushing dogs, because they display the ideal character of the type – high levels of energy, a fearless attitude to moving through undergrowth, a keen nose and sharp eyesight.

The body language of flushing animals often mirrors their proximity to their prey – the wagging tail will accelerate as the dog closes in on its target, and the movements will become more focused on a particular spot.

Flushing dogs are ideal for bird hunting in grassland and woodland, but they can also be applied to ground-dwelling animals such as rabbits.

Note, too, that there are several breeds of dog that can perform all the retrieving, flushing and pointing roles outlined above, and their training can be tailored accordingly. Known as 'HPR' dogs (hunt, point, retrieve), the best known of these breeds are:

- Bracco Italiano
- Brittany
- German longhaired pointer
- German shorthaired pointer
- German wirehaired pointer
- Hungarian vizsla
- Hungarian wirehaired vizsla
- Italian spinone
- Korthals griffon
- Large munsterlander
- Slovakian rough-haired pointer
- Weimaraner

Hounds

Hounds are essentially pursuit dogs, tracking prey either by smell or sight (or a combination of both) over potentially long distances. Once hounds find their prey, they can trap it for the hunter or kill it themselves. (It should be pointed out that hunting

with dogs, or at least letting the dog kill the prey, is illegal in many countries, so make sure that you only work your hounds within the limit of the law.)

Hounds embody multifarious breeds and temperament. English and American foxhounds, for example, are high-endurance breeds that will detect, flush out and hunt prey over many miles as part of a pack, traditionally in tandem with mounted hunters. Basset hounds, by contrast, are more methodical (and slower) trackers, using their phenomenal sense of smell to sniff out rabbits, hares, squirrels and similar creatures. Whippets, greyhounds and lurchers are short-range pursuit animals, using their famous powers of acceleration and speed to chase down fast-moving ground prey on sight.

Classic hunting hound breeds are:

- American coon hound
- Basset hound
- Beagle
- English/American foxhound
- Irish wolfhound
- Rhodesian ridgeback
- Scottish deerhound
- Walker hound

Terriers/Earthdogs

'Earthdogs' refers to those species of dog that were bred to hunt prey in their underground burrows. The very nature of this work meant that such dogs are small with short but powerful legs and very tenacious characters. Again, sending dogs underground to hunt is prohibited in many countries, and given the danger of the dog becoming lost or buried it is generally not to be encouraged for those dogs with little experience.

However, the scrappy spirit of many terrier species, such as Jack Russell, Scottish, Cairn and Border terriers, means that they can still be usefully applied in hunting pests such as rats and small game like rabbits, if the latter can be cornered.

Terriers are not necessarily the most trainable of dog breeds, so they need firm control if they are to be used in hunting settings (for example, make sure that they will release the prey when told to do so). There is also a limit to the types of prey that they can pursue, given their short legs. Nevertheless, the terrier can be a useful hunting companion when used within reasonable limits.

Fox Hounds

Fox hounds are the ultimate pursuit pack animal, able to follow a fox by scent over many miles without tiring.



Dog Training

A dog can only be an effective hunting animal if it is trained properly. Without adequate training it will lack the discipline you need in the field, and will be more likely to scare off prey than bring it to your cooking pot. Furthermore, an ill-trained dog is at greater risk of being wounded or killed during a hunting trip. Every year dogs are shot in hunting accidents, the inexperience of both dog and hunter putting the animal accidentally into the firing line.

Key points about gun dog training need to be made at the outset. First, remember that you are harnessing your dog's natural instincts to hunt, not forcing it to behave in strange ways. Some of the most intelligent gun dog species will almost train themselves, if you simply take them out into the field with you regularly.

A dog can be very responsive to their owner's behaviour, so if you mentally work as a team with your dog, the animal is more likely to get caught up with the experience and do what you want it to do. Most important, build up a close relationship of trust with your animal; the greater the trust the animal has in you, the better it will work with you when out hunting.

Obedience Training

The second key point is that you must be in control of your dog's basic level of obedience. Whether at home or in the field, enforce strict rules about the behaviours you will accept from your dog and those you will not. Project authority over the animal

with your body and your language. Some gun dogs can be extremely wilful, and will do their own thing or even attempt to dominate you if you cannot control them. Therefore, it is essential that you establish boundaries and rules and apply them consistently; the dog will actually be much happier in the long run if it knows clearly how to behave. Start your training when the dog is just a puppy, as it becomes progressively more difficult to train a dog as it ages.

At a basic level, initial gun dog training is little different to that used for a domestic dog. You should teach the dog three basic commands: 'sit', 'stay' and 'heel'. (Although some people prefer to omit the first two orders when they are training pointers.) Get the dog to adopt the sitting position by holding the animal's chest up with one hand, and forcing its bottom to the floor with the other hand while stating a clear 'sit!' Do this until the dog sits on the command, without the physical coercion. You can develop this command into more specific gun dog training by then giving the verbal command followed by a visual signal – an arm raised in the air – and a blast on a dog training whistle. Eventually, the dog will learn to sit to all three commands independently of one another.

Guard Dogs

Don't confuse guard dogs with hunting dogs. Some guard dog breeds, such as Dobermans, can indeed make good hunting dogs, but others such as Alsations are less naturally suited to hunting activities; they are better at defensive or protective roles.



You can extend the 'sit' command into 'stay' by getting the dog to sit, but keeping your arm raised in the air while backing off slowly. If the dog moves, reposition him to sit and repeat the backing off movement until you, with enthusiasm, tell it to move when you are ready. This process can take many repetitions before it is perfected, particularly if there are numerous distractions around, but eventually the dog will stay put for many minutes until you give the signal.

'Heel' is learnt by walking the puppy on a leash, keeping it by the side of your leg. When the dog pulls away in a different direction, jerk the lead firmly and say 'heel!', moving the dog back into position. Then keep walking for a few more steps before stopping, telling the dog to sit, and giving it lots of praise and fuss. (In all training, when a dog does something right, give it praise and even little treats, reinforcing the message that obedience brings rewards.) Keep repeating this process in short sessions, and develop this until the dog walks to heel without the leash. Note that in any training process, you shouldn't make the sessions too long or the dog will become tired and distressed. Also, inject a sense of fun into the training to create a receptive mindset in your dog.

Training to Retrieve

Explaining all the techniques of gun dog training here would take a book in its own right. We can, nonetheless, explore some of the most important techniques as

illustrative examples. Training a dog to retrieve, for instance, can be a fun and pleasurable phase for a young animal. For the first six months of your puppy's life, simply practise throwing a retrievable object (such as a knotted sock) for the dog, and letting him or her chase the object and bring it back to you, connecting the action with the word 'fetch'. Encourage return of the object verbally and emotionally, then when the dog comes back, remove the object from his mouth and make a big fuss to show your approval. This simple exercise will be tapping into the dog's natural appetite for play, and to return to a safe place once prey has been caught (as it would in the wild).

As the dog gets older you can extend the training to a more demanding outdoor setting, and also use a specially designed retrieving dummy that emulates the weight of actual prey. For extra realism, and to get the dog used to the smell and feel of feathers, you can tape bird's wings (taken from a previous kill) to the dummy. You can even use whole small birds, although throwing them with any distance can be awkward. What you need to do now, however, is begin to associate the act of retrieving game with the sound of a gunshot. Furthermore, you need to get the dog used to the sound of gunshots in the first place.

Dogs can be startled by loud sharp noises such as gunfire, which assault their highly attuned senses, but as millions of gun dogs have proven, there is no such thing as a naturally 'gun shy' dog. One general point to bear in mind is that a dog will often look for clues to the correct response to stimuli from its owner. If the owner appears calm and relaxed, the dog is more likely to remain so. In other words, don't be too anxious for your dog, as this may in itself trigger nervous responses in the animal.

Training for Retrieval

You can instill basic retrieval skills in your dog by using a retrieval dummy. These are typically canvas bags weighing 0.2–0.9kg (0.5–2lb), and are thrown or placed for the dog to collect upon command.



Basic Obedience

Getting your dog to obey the 'stay' command is vital to its overall obedience and hunting training. Gradually extend the time period the dog can stay seated, using both hand and voice commands so that eventually the dog will obey either.



Training in Flushing Techniques

Once the dog is completely comfortable with the sound of gunfire, including shotguns and rifles fired in close proximity, you can connect gunshots with the act of retrieval. Practise throwing the retrieval dummy and firing a shot at the same time, doing this procedure several times before breaking off and allowing the dog to rest. If you are

practising retrievals from water, throw the dummy just a short way into the water and see if he goes in of his natural accord. If he looks tentative, wade into the water a short way yourself to show that there is nothing to fear. If he is just getting used to swimming, support his torso as he builds up confidence. Gradually increase the distance of the throw into the water until the dog confidently swims out to prey offshore. Always take account of water conditions, however. Never shoot a bird that will drop into fast-flowing water; not only will you lose the bird, but your dog could drown going in after it.

Training your dog in flushing techniques is in many ways an extension of the retrieval process. Flushing dogs such as spaniels naturally love to scamper energetically through undergrowth, their keen noses snuffling up the many scents around them. You can hone this process to flushing game by putting several dummies in the undergrowth; throw them ahead of you, rather than in places where you have just walked, so the dog doesn't follow your scent trail, and do this when the dog isn't watching. Then release the dog, allowing it to follow its nose naturally through the undergrowth, but providing basic directional guidance with your voice and hand actions.

Water Retrieval

When training gundogs, introduce them to shallow water at an early age, building up their confidence to the point that they can swim out to retrieve floating dummies. Be careful, however, that you don't send your dog into fast-flowing waters.



When your dog finds the dummy, he is likely to pick it up in his mouth, at which point you should give the 'fetch' command. This simple activity, repeated often enough, will train the dog to sniff out game prey among foliage. You should refine the dog's skill by using dead birds instead of retrieval dummies. Also make sure that you can call the dog back to you when needed, training it with a 'here' command reinforced by treats when it returns.

Waiting for the Shot

A good gundog is completely unphased by the sound of a shot, even in close proximity. When you are shooting from a fixed position, the dog should remain static until a bird is downed.



Training to Point

Training a dog to point is a little more sophisticated, as it requires you to inculcate the dog with restraint. A good method of doing this in the home is to place the dog's food bowl in front of it, holding back the animal with your hands and saying 'whoa' or a similar restraining word. After some moments have passed in this static position, release the dog with plenty of fuss and give a permissive command, such as 'OK'.

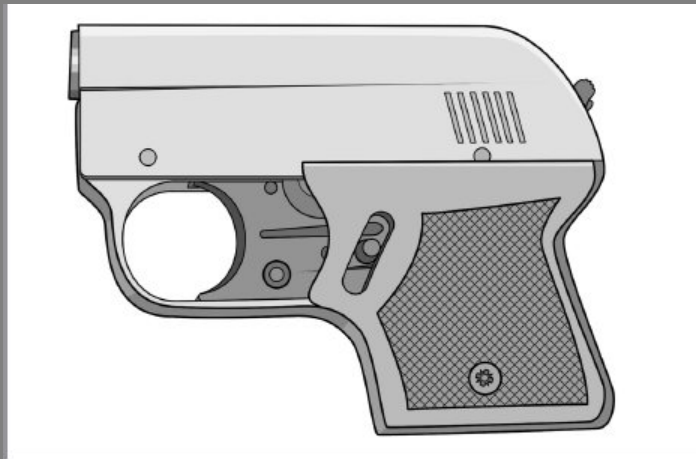
Flushing Birds

Three spaniels flush out a partridge from an area of grassland. The hunter must ensure that he has a clear line of shot to the prey, without

endangering the dogs (hunting dogs are accidentally shot by careless hunters every year).



Gun Training



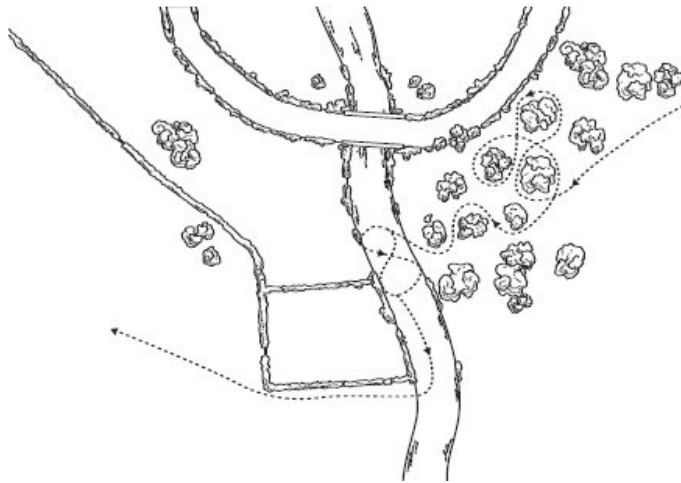
Gun training is, like all forms of dog training, best begun while the animal is still young. Start off by firing some low-volume weapon (such as an airgun) in the animal's presence, progressing on to a .22 starter pistol to deliver a more powerful crack. Tie the report of the gun into some pleasurable activity, such as a treat or bowl of food, and eventually the dog will come to associate the sound of the shot with pleasant experiences, and realize that it is nothing to be afraid of. You can increase the immersion in shooting noise by taking the dog several times to a local clay shooting ground or pheasant shoot; stand with the dog near the shoot, and move closer to the guns on each successive visit. Tie the experience in with a walk for the dog, to increase its association between firearms and fun.

Next, you need to move out into the field. Once the dog spots a bird, and goes into the classic pointing posture, say 'whoa' firmly to keep him in place. Then advance up

to the point the dog is indicating until you flush out the bird and shoot it. As the bird falls, give the 'fetch' command and all the usual praise once he brings the bird back.

Tracking Route

Dogs that track by scent can become confused if the route of pursuit, depicted here by the arrowed line, loops back on itself or crosses water. If this happens, it might be best to lead the dog away from the difficult area and try to pick up the scent track elsewhere.



If, instead of pointing, the dog simply chases the bird, next time attach his collar to a check cord (a long length of cord used to restrain the dog). Restrain him from running using the check cord, then move up to him while repeating the 'whoa' command. Have a shooting colleague then flush and shoot the bird, at which point you can release the dog to go and fetch. During this critical training phase, never shoot a bird that you have flushed but which the animal has not pointed.

Thus trained, your pointer will serve you well in the field. Using the check cord, you can give the dog a clear sense of how far he can go from you. You will also be able to control the dog's direction of travel by giving a shout, such as 'get over', or a blast on a whistle to get attention, then steering your body in a definite direction that the dog will hopefully follow.

Dog Safety

You have a duty of care to exercise towards any hunting dog. Have it properly vaccinated, and keep the vaccination programme up to date. Also ensure that your

dog is regularly treated for fleas and worms, and check the skin for ticks after every hunting trip.

While out hunting, watch your dog carefully for any signs of either hypothermia (dangerously low core body temperature) or hyperthermia (dangerously high core body temperature). Hypothermia shows itself in shivering and slow, shallow respiration and an increasing listlessness. If you spot these symptoms, dry the dog off, wrap it in a blanket or other material and get it into a warm place as soon as possible. (If you have a car or truck, move the dog into the vehicle and put the heaters on.)

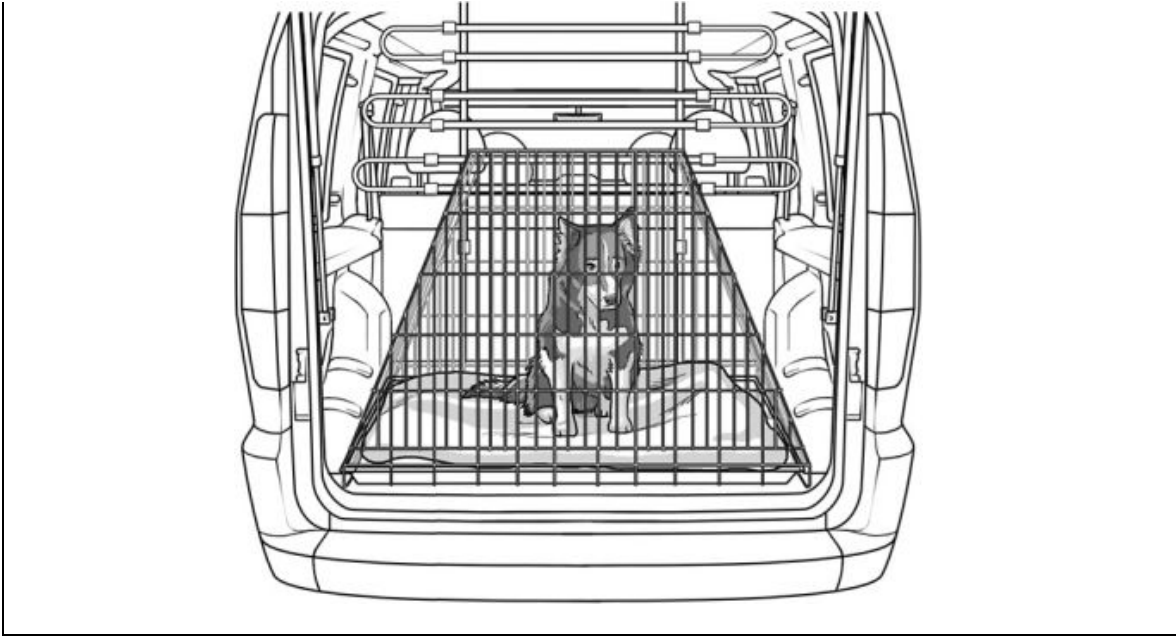
Dog First Aid Kit

First aid kits for dogs can be a useful addition to any hunter's kit. Typical contents include paw bandages and dressings, tape, tweezers (for removing thorns) and irrigation solution.



Safe Travelling

A transit cage is the ideal way to transport your pet, as it prevents the animal being thrown around the vehicle interior in the event of an accident. Pad the bottom of the cage with a thick blanket for warmth, and ensure that the cage is firmly fitted to the car.



Hyperthermia symptoms include excessive panting, heavy salivation followed by dry gums, plus weakness and disorientation. Get the dog to a cool place and give him fresh water to drink. In both cases, take the animal to a vet as quickly as possible. Remember, too, that even the hardest of dog breeds can succumb to these conditions, so never overestimate the toughness of your animal. Make sure that the dog receives regular rest breaks throughout the working day, and never leave a dog in a car in hot weather.

The safety of your dog can be improved through various items of canine clothing. A collar is obviously useful for control and identification, but buy a special hunting safety collar that allows the dog to escape from it, if it becomes tangled up in foliage. Clothing the dog in an orange reflective jacket will reduce the chances of the animal being accidentally shot by you or other hunters. You can also fit the dog with special boots that will serve to protect his soft paw pads from thorns, sharp sticks and pointed stones. Have a canine first aid kit with you at all times, and read the instructions thoroughly so that you know how to treat basic injuries.

Finally, ensure that your dog is properly transported. Never let a dog wander loose on a back seat or on the bed of a pickup; conversely, never stow a dog away in a car boot. Instead, place the dog in a dedicated transportation cage, with the bars of the cage padded to prevent injuries if you have to brake suddenly.

Other Hunting Companions

As well as dogs, there are several other types of hunting animal worth a brief mention. For rabbiting, for instance, there are few better natural hunters than ferrets, which can be trained to go directly into warrens and flush the rabbits out. By placing nets over all the obvious rabbit holes, you have the chance of netting an easy meal as the rabbits flee in panic.

A more sophisticated form of hunting with a noble ancestry is falconry – hunting with trained birds of prey. Falconry tends to be subject to intense regulation, as many bird of prey species are endangered in the wild. This being said, falconry is a natural and environmentally sensitive form of hunting, and one that can be extremely effective with the right type of bird and an experienced handler. If you are thinking of trying falconry, your best starting point will be a falconry club, where members can give you all the right entry-level advice. Most importantly, remember that whatever animal you use for hunting, its welfare is paramount – any creature that will bring you food deserves your fullest care.

Ferret

Their small size and curiosity make ferrets ideal for flushing rabbits out of holes and warrens.



Bird shooting is a very specific type of hunting, reliant principally on the use of a shotgun. Shotgunning is itself different to any other manner of shooting, and requires many hours of practice to build up an 'eye' for a good shot.

Hunting Techniques: Birds

The list of feathered prey for hunters is enormous, ranging from diminutive and solitary birds such as the snipe to great flocks of Canada geese, each weighing many kilos. The experience of hunting birds is equally varied, depending on your resources (often financial) and access to land. For some, a good day's bird hunting consists of little more than roaming woodland with an alert dog and a basic shotgun, hoping to spot and shoot anything that can be legally put on the table. For others with deep pockets, however, a day of driven pheasant shooting can cost hundreds, even thousands, of dollars if the shoot takes place on a prestigious estate.

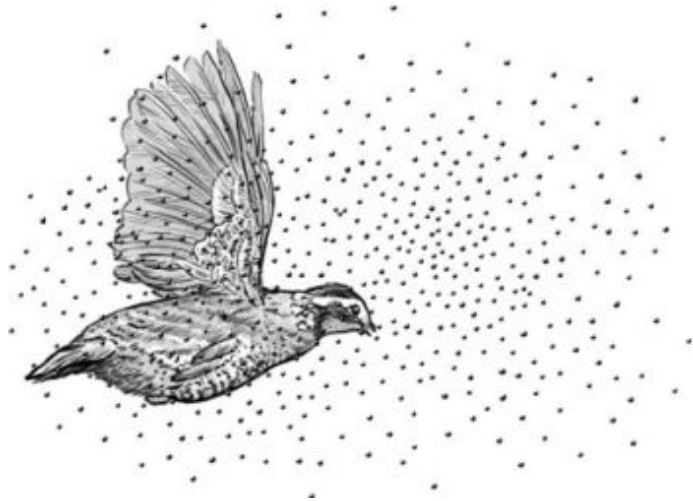
Here we will look at the fundamentals of bird shooting, bearing in mind what has already been said about tracking and stalking, and also about hunting with a dog. First, however, we need to take a deeper look into the world of shotgunning, and the problems it can cause for the unwary.

The Art of Shotgunning

There are naturally good reasons why a shotgun is used for bird shooting. While a rifle can be used against birds that are static on the ground, birds are most commonly shot on the wing, when they can be travelling at a considerable rate – some types of pigeon, for example, can fly at speeds of 100km/h (62mph). To hit a fast-moving bird with a single bullet would take legendary shooting ability. The shotgun, by contrast, can throw out a spread of shot that creates a pattern around the target, maximizing the chances of a hit on the bird even when it is in full flight.

Shot Spread

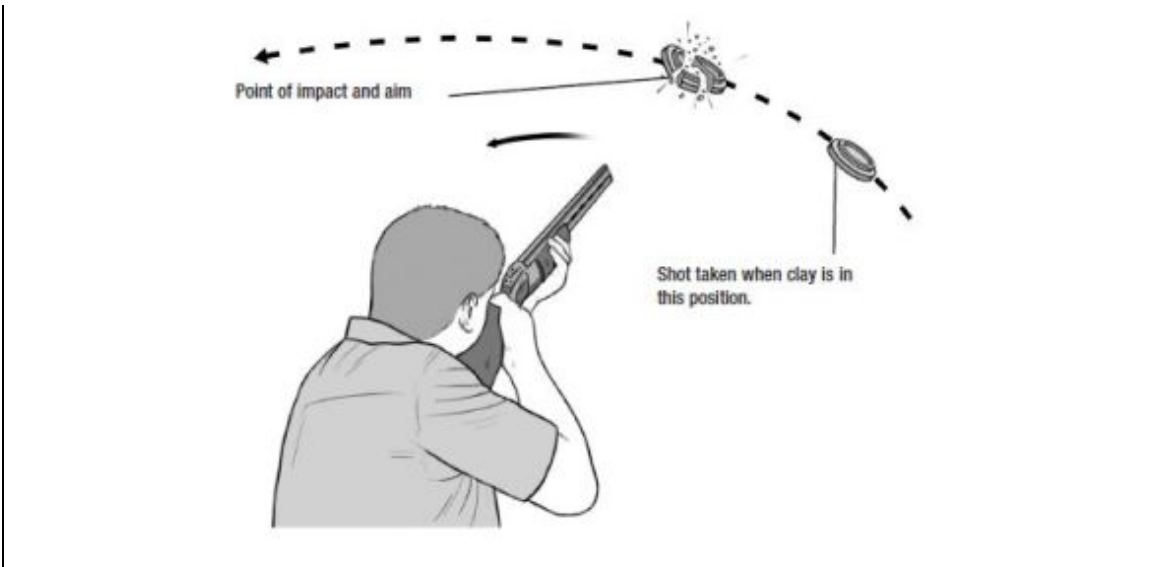
With shotgunning, you are aiming to place the target bird in the centre of your shot spread, maximizing the number of impacts.



The problem with shotgunning is that the weapon has been historically misrepresented in the media and in films as a gun with which no one can miss a target. This idea couldn't be further from the truth. Shotguns typically have an effective range of 30–50m (98–164ft), so range alone is a limiting factor on whether you can hit something. As any field shooter knows, wild birds often have a seemingly uncanny ability to judge the range of a hunter's shotgun, staying just out of reach of all but the heaviest pellets. More importantly, even if a bird is within range, the hunter only needs to be a centimetre or so out of alignment for the pattern of his shot to miss the prey entirely. Here, therefore, we need to address some of the core principles of effective shotgunning before we go on to study bird hunting in proper detail.

Clay Training

Clay shooting provides extremely useful practice for bird shooters, training the shooter in a wide variety of lead patterns.



Lead

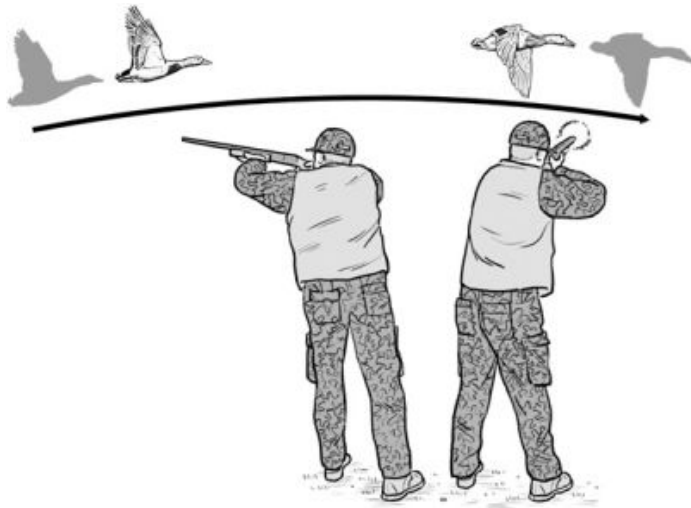
When shooting moving targets like birds, especially if they are climbing, diving or flying across the field of vision, the most critical factor in the effectiveness of the shot is lead. The word 'lead' quite simply refers to the allowance you have to make between the aimed point of the shot and the position of the bird (in this case) at the time you pull the trigger. In essence, you are shooting at the point where the bird will be by the time the shot reaches it; shooting directly at the bird will typically involve a miss behind, especially if the bird is crossing.

Understanding lead is essentially a process of experience, shooting at numerous targets and having an expert shot advise you on the correct lead, while also building up mental models of the correct 'lead picture' for each type of target. So, for example, you might find that when shooting a slow 'quartering' bird (crossing in front of you but travelling at an angle of around 45 degrees in relation to your position), the only lead you need is to shoot just in front of the bird's beak. If you are shooting a 'crosser' at altitude, however – such as a high-flying goose – you will need to shoot many feet in front of the target to achieve a hit. The permutations are many and subtle, and the best way to build up the lead pictures in your head is to shoot sporting clays (as opposed to skeet or trap) regularly, testing yourself on a wide variety of target presentations.

Pull-through Technique

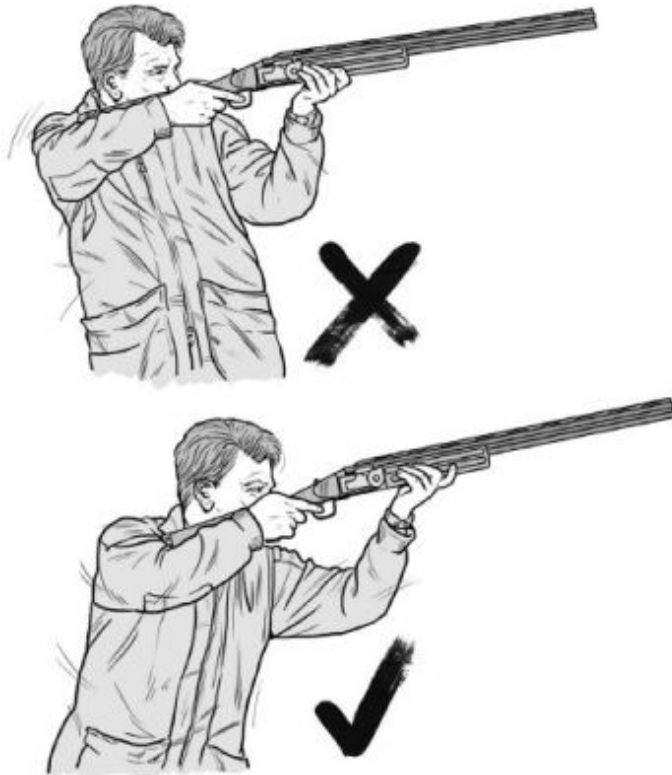
Applying the pull-through technique, this hunter starts with his gun behind the bird, then swings smoothly through the target, only pulling

the trigger as the gun swings ahead of the bird's beak.



Correct Stance

When shooting any longarm gun, lean forward into the shot, allowing your body weight to brace the recoil. Don't lean back, as this is an unstable position with a poor eyeline down the barrel.



There are many schools of expert opinion on the best way to find the correct lead for your target, but three that warrant explanation are 'maintained lead', 'pull-through' and 'point and push'. Note that in all of these cases, you should keep both your eyes open, as stereoscopic vision helps you to make more accurate lead and range adjustments.

Maintained lead

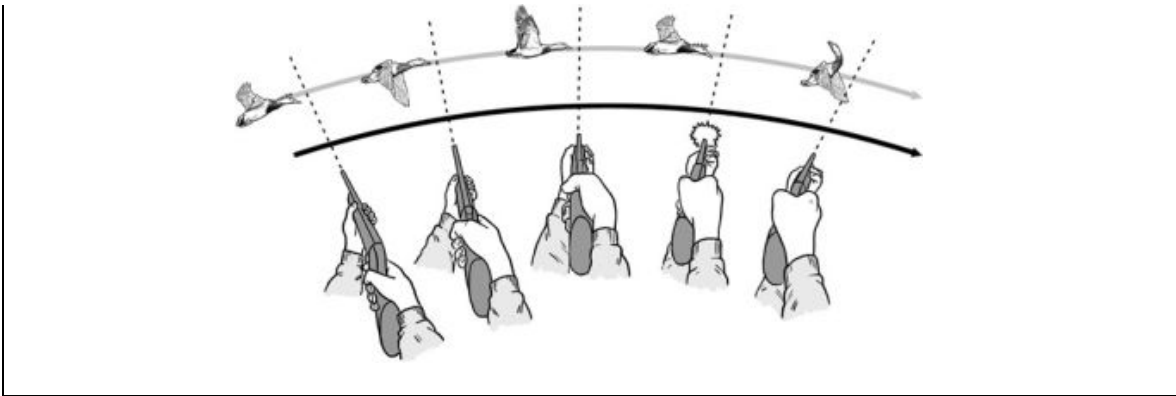
Maintained lead involves never letting your gun fall behind the bird. Keeping your eyes firmly on the target, you push the muzzles ahead of the bird as the gun comes to your shoulder, mounting the gun onto the lead point and pulling the trigger as soon as the stock is firmly in your shoulder and your cheek is down. As a general rule, don't 'hang on to' a bird – constantly adjusting your aim and lead once the gun is in your shoulder. This process tends to result in your gun slowing down and shooting behind the target.

Eye Dominance

If you are a right-handed shooter, you ideally want your right eye (i.e. the one that looks directly along the gun barrel) to be the dominant of the two eyes. To check this, point with your left index finger at a distant mark, keeping both your eyes open. Then close your left eye. If the index finger remains pointing at the target you are indeed right-eye dominant, but if it shifts off the mark you could be either cross dominant or left-eye dominant. (Reverse the sides of the instructions above if you are a left-handed shooter.) Problems with dominance can explain many misses in shotgunning. Ways to compensate include (if you are right handed) partly closing your left eye the moment before your shoot, keeping your eyes glued firmly on the target (don't look at the barrel), and using your left index finger, extended up the fore-end of the gun, as a guide to your aiming point. (When using this last technique, think of shotgunning as accurate pointing rather than aimed shooting.) Hunt

Maintained Lead

When taking this shot, the hunter keeps his gun out ahead of the bird at all times, and keeps the barrel moving smoothly even as he pulls the trigger.



Pull-through

Here you bring the muzzles of the gun up behind the bird, following the trajectory of its flight, then push the muzzles up and through the flight line, pulling the trigger as soon as the gun moves ahead of the target. (Another general rule – you need to keep the gun moving even as you pull the trigger; stopping the gun on the trigger pull is once again likely to result in a miss behind.) A good way to think of this technique is to imagine that the muzzle of the shotgun is a paintbrush, and you are painting a streak of colour through the bird's flight. British shooters also have a catchphrase to clarify the sweep of the gun across the target and the moment of firing: 'Butt, Belly, Beak, Bang.'

Point and push

In this technique, the gun is mounted directly onto the bird, and follows it briefly to gain trajectory and speed information. Then the gun is pushed ahead of the target and the trigger pulled.

The pros and cons of each technique are endlessly debated, and with some passion. However, the author maintains that all three have their utility depending on the target, and therefore you should get acquainted with the techniques on a clay ground to become a rounded shooter. Maintained lead, for example, is useful on crossing targets such as geese, where you have plenty of time to study before taking the shot. For a sudden bird that explodes from a bush just metres away from you in thick woodland, pull-through might work best, as you could be forced by the terrain to swing your muzzles from behind. On a high incoming bird, such as a pheasant, point and push could give you the best way to make sense of the bird's flightline, especially as the bird will actually disappear behind your muzzles when you push the gun ahead to take the shot. Experiment constantly with the techniques until you find a mixture that works for you.

Birds and Their Presentations

All birds have idiosyncratic flight patterns, and this is what makes bird hunting such a challenging pursuit. Woodcock, for example, can break suddenly from cover as your dog flushes it out, the bird adopting a fast jinking pattern of flight that challenges even the most competent shot. Duck, by contrast, can fly in swooping lines onto a pond, lake or river, the shooter waiting in his hide to bag a good specimen. The picture is complicated by the size and speed of the bird. For example, Canada geese can appear to be a relatively simple target when they fly overhead in a large skein. Yet their size often gives the illusion that they are flying slowly, resulting in the shooter giving them insufficient lead and missing the birds behind.

Overhead bird

The shooter catches the pheasant as it is climbing up and overhead. He swings up through the line of the bird's climb and pulls the trigger just as the bird disappears behind the muzzle.



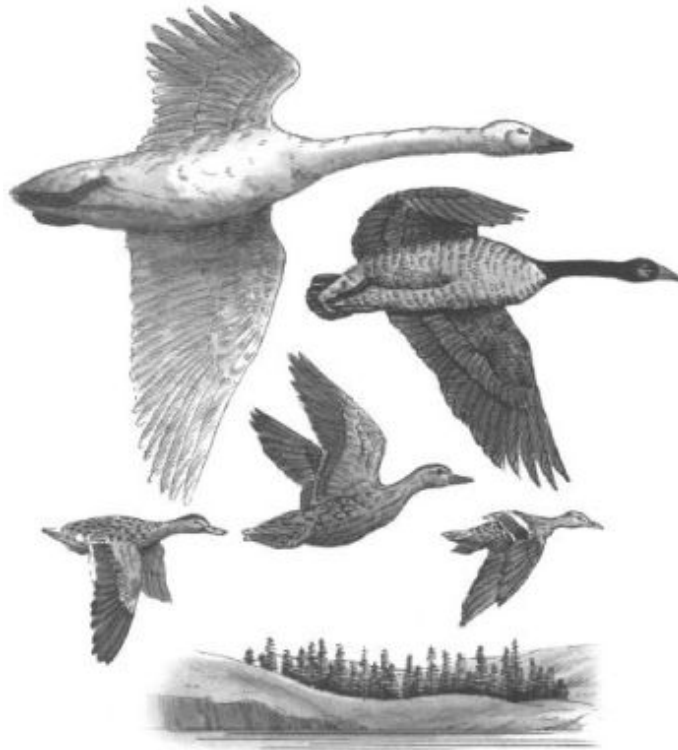
Eye Dominance

This shooter has a problem with eye dominance, because his eyes are not focused where the barrel is pointing. Keeping the eyes locked onto the target, and not looking at the barrel, helps solve this problem.



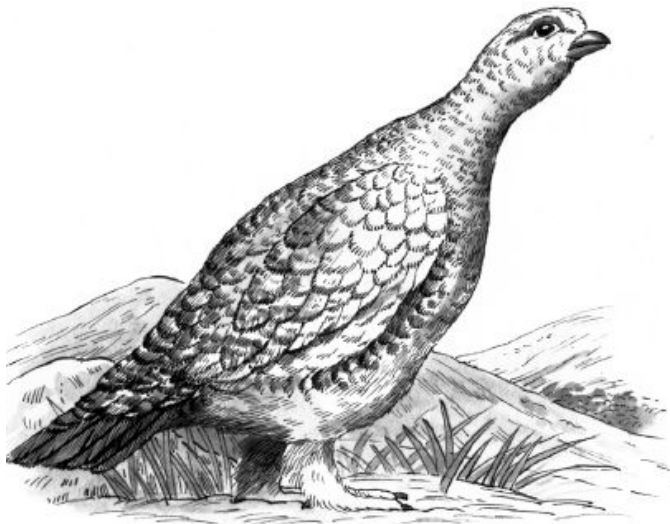
Game Birds

Game birds come in a wide variety of shapes and sizes. Here, they range from small ducks up to sizeable geese, the latter requiring shotguns firing heavy loads of shot.



Ptarmigan

The ptarmigan is a hardy game bird found in the far north of Scotland. It has excellent natural camouflage, and goes almost totally white in the winter months.



Time in the field and some good book research will teach you about the ways that each type of bird flies, but it is useful to reflect on some general principles of how to handle distinctive patterns of flight.

Driven Birds

Driven birds refer to birds that fly in towards you, either directly or at an angle to your side, and from either in front or behind. Such birds can, quite literally, be driven onto your gun by beaters slashing their way through the undergrowth ahead, with pheasant being the classic driven game. The problem with driven birds is primarily one of body dynamics (yours, not the bird's). Most shotgunning is conducted with the body's weight squarely on the front foot, pushing the shoulders forwards and into the gun. With driven birds, the presentation can force the cheek to lift off the stock as the shooter arches his body upwards, resulting in inaccurate shooting.

Taking High Shots

When a target is directly overhead, drop your weight naturally onto your back foot, to prevent you straining to arch your back over. Make sure, however, that you keep your cheek down firmly on the stock.



Multiple Targets

When faced by multiple targets like this flight of ducks, don't be tempted to shoot generally at the mass of creatures. Instead, single out one creature at a time, and try to hit that individual.



If the bird is flying from your front to back, mount the gun with the weight still on the front foot and maintain this posture until the muzzles are nearing the vertical. If you haven't taken the shot by now, lift up the heel of the front foot and allow your body weight to transfer smoothly to the back leg, which allows you to swing your gun through the perpendicular. Remember that the bird will often disappear behind the gun when you apply lead to this type of shot; hold your confidence when doing this, and don't hesitate to pull the trigger the moment you think the timing is right.

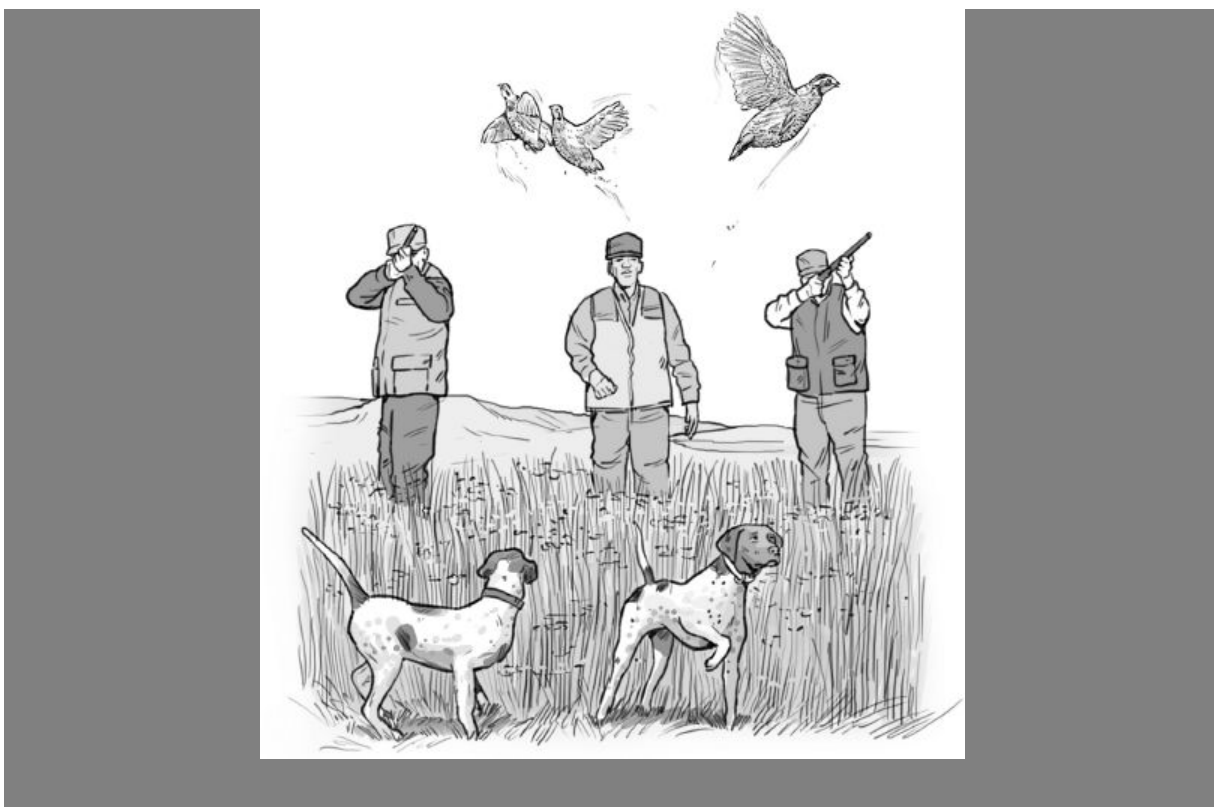
Common North American Quail Types for Hunting

Bobwhite quail tend to inhabit uncultivated land, especially ditches, hedgerows, brush and some pine woods. Best hunting times are mid morning and afternoon, and after rain.

California quail live in brushy open areas and uncultivated farmland, eating seeds, grain, fruit and berries. Covey scatters into undergrowth when startled and remains hidden until older birds signal 'all clear'.

Mountain quail are large quail often found around steep, grassy hillsides, eating oats, grain and rye. Flush the birds by moving down the hillside, not up (in the latter case they will simply run uphill through the brush).

Scaled quail live in arid, brushy terrain near waterholes and ponds. When startled they can run at 25km/h (15mph), so will often be shot on the ground.



When a bird is flying from the opposite direction (from behind you), start with your weight on the back leg, your head raised to the sky to spot the target. Once you have seen the bird, begin to mount the gun while shifting the weight back onto the front leg. Ideally, the gun and bird should meet together at a point comfortably in front of you; make sure that you take the shot before the bird puts too much distance between you and it.

Crossing Shots

Crossing birds are those that fly directly, or at an angle, across your frontal field of vision. They can be infuriating shots to take, not least because the smallest error in lead will result in a miss either in front or behind, while a misjudgement in the bird's trajectory will put the shot above or below. There is also a difference between practising crossers at a clay ground and applying those principles to real birds. When a clay is launched from a trap, the power is diminishing constantly throughout the flight, causing the clay (eventually) to drop to earth. This introduces a certain predictability to a clay's flight. With a living bird, however, power is applied constantly with every beat of the wings, and the direction of flight can change in fast and unpredictable ways (also known as jinking). This means it is even more imperative

that gun movement is maintained throughout the shot, and that you don't hang on to the target before firing.

Crossing birds are often suited to a maintained lead approach. As soon as you see the bird, lock your eyes onto it and quickly 'see' the correct lead picture in front of the bird. (If it helps, imagine a shadow projecting from the front of the bird's beak, the tip of the shadow being the correct lead distance.) Mount the gun quickly and smoothly and shoot once it is in your shoulder. You won't have time to judge the lead picture meticulously, but neither should you rush the shot.

All shotgun shooting should be a smooth, flowing process from raising the gun to pulling the trigger, with no awkward time lags or gaps at any stage. Note that with crossing birds (or indeed any presentation of bird) that are flying lower than your shooting position, such as down in the bottom of a valley, you should ensure that all your weight is sunk heavily down over your front foot and that your cheek is squarely on the upper part of the stock.

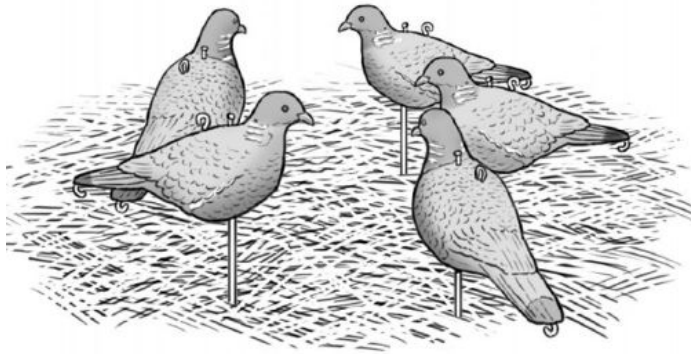
Going Away Birds

Birds that fly directly away from you can be among the easiest to shoot. If they fly straight and low, all you really need to do is shoot straight at them. As long as it is in range and your gun is properly mounted, you should hit the bird. If you don't, it is likely that you have misread some of the subtle elements in the flight pattern. The backdrop a bird flies against, for example, can often confuse the eye, especially if the horizon or a ridgeline follows a slightly different alignment to the bird's trajectory.

If the bird is quartering, i.e. flying away at an angle to you, you will have to lead the bird off to the side it is travelling towards. The amount of lead you have to apply obviously depends upon the angle at which it is flying in relation to you, but as a general rule avoid extreme amounts of lead except when the angle means that the bird is virtually a crosser. More important is to spot where you want to kill the bird from the moment you start mounting the gun, and concentrate all your efforts on that particular point.

Pigeon Decoys

Plastic pigeon decoys such as these are a costeffective way to attract pigeons into a killing area. Locate the pigeons at logical locations along a known flightline.



US Fish and Wildlife Service: Approved Shot Types for Wildfowling

The shot types that are approved as nontoxic for waterfowl hunting in the US are shown here.

Approved shot type*	Percent composition by weight	Field testing device**
Bismuth-tin	97 bismuth, and 3 tin	Hot Shot7***
Iron (steel)	Iron and carbon	Magnet or Hot Shot7
Iron-tungsten	Any proportion of tungsten, and >1 iron	Magnet or Hot Shot7
Iron-tungsten-nickel	>1 iron, any proportion of tungsten and up to 40 nickel	Magnet or Hot Shot7
Tungsten-bronze	51.1 tungsten, 44.4 copper, 3.9 tin and 0.6 iron, or 60 tungsten, 35.1 copper, 3.9 tin and 1 iron	Rare earth magnet
Tungsten-iron-copper-nickel	40-76 tungsten, 10-37 iron, 9-16 copper and 5-7 nickel	Hot Shot7 or rare earth magnet
Tungsten-matrix	95.9 tungsten, 4.1 polymer	Hot Shot7
Tungsten-polymer	95.5 tungsten, 4.5 nylon 6 or 11	Hot Shot7
Tungsten-tin-iron	Any proportions of tungsten and tin, and >1 iron	Magnet or Hot Shot7
Tungsten-tin-bismuth	Any proportions of tungsten, tin and bismuth	Rare earth magnet
Tungsten-tin-iron-nickel	65 tungsten, 21.8 tin, 10.4 iron and 2.8 nickel	Magnet
Tungsten-iron-polymer	41.5-95.2 tungsten, 1.5-52.0 iron and 3.5-8.0 fluoropolymer	Magnet or Hot Shot7

* Coatings of copper, nickel, tin, zinc, zinc chloride and zinc chrome on approved nontoxic shot types also are approved.

** This column is for information only, it is not regulatory.

*** The HOT*SHOT field testing device is from Stream Systems of Concord, CA. Hunti

Going-away birds become really interesting when they start to climb upwards. Some game birds, particularly water birds (this explains why there is a clay presentation called 'springing teal'), can climb rapidly nearly straight up. With such targets, a variation of the pull-through technique can be useful. Bring your gun up steadily below the bird, and at the moment the muzzles visually blank out the target, pull the trigger while keeping the gun moving steadily upwards. As you move the gun up, keep watching the bird to ensure that it doesn't flatten out at the last second, causing you to miss overhead. If a bird climbs up and at an arcing angle, try to hit it at the apex of the arc before it curls away and drops out of sight.

Incoming Birds

Handling the incoming bird, especially one that is dropping rapidly, has special relevance for the wildfowler who has to tackle ducks and geese coming in to land at a pond. The incoming bird under these circumstances can be losing speed and height at the same time, so judging the correct lead beneath it is awkward. The point and push can be a good technique on these birds – keep the muzzles on the target to gauge its movement, then drop beneath and pull the trigger. If the bird is flying towards you, don't feel that you have to let it get too close before taking the shot. As the distance between you and bird closes, so your shot string tightens – leaving a bit of distance can improve your chances of a hit.

Hunting Techniques

The most basic method of bird hunting, particularly for species such as quail, pheasant, grouse, chukar and partridge, is simply to go walking through woodland or thick vegetation with a well-trained dog and gun at the ready. The dog can be of either the flushing or pointing type, and the working dynamic between dog and owner must be smooth and dependable (see Chapter 5 for more on hunting with dogs).

In areas where game are scattered over large distances, it is not unusual to find flushing done by quad bikes and similar off-road vehicles, with the shooters ready to fire directly from the vehicle. One important safety note here – take great care when

travelling in vehicles with loaded guns. Trigger mechanisms can be sensitive to abrupt knocks, so at all times ensure that the barrel of the gun is pointed away from the vehicle and its occupants, and kept fully under control.

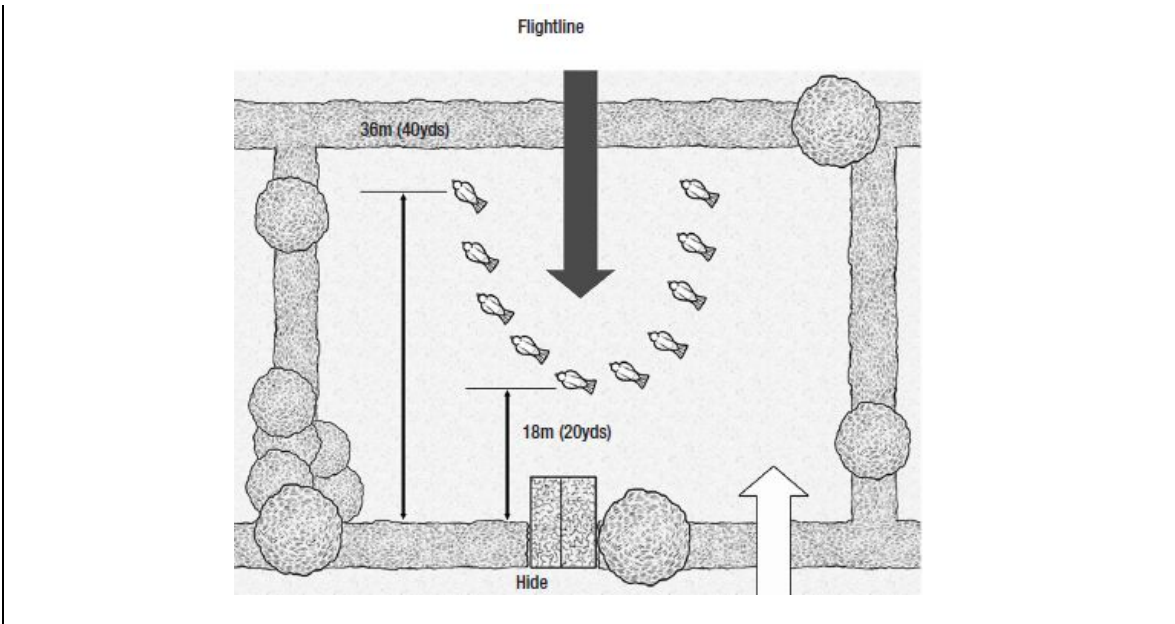
As always, research your bird types thoroughly before heading off on a shoot. Note, for example, that there can be distinct differences in the behaviours and physical characteristics of sub-species. The ruffed grouse of North America likes to inhabit thick foliage and brush on the edge of young forests or forest openings, feeding on berries, fruit and grasses. It is a fast-flying bird, apt to leap from cover when startled and whiz off out of sight among trees. The sage grouse, by contrast, spends its life around the sagebrush plant, growing stout in the process and consequently being a rather sluggish flier as well as a tasty meal. The moral is, don't assume a one-size-fits-all approach to hunting.

Decoying

Another popular method of bird hunting is that of decoying. This involves luring birds into a feeding area with either bird models or using dead birds, propped up with sticks or wire to give a living appearance. Pigeon hunting is a good case in point. Woodpigeons tend to live in specific areas of woodland situated conveniently between the agricultural fields (especially those that have been recently harvested) in which they like to feed. The routes between the woods and the fields are known as flightlines, and they act as predictable routes for the birds to follow. If you are intending to hunt pigeon in an area, it is advised that you do a recce trip first, observing the flightlines that the birds take and all the stop-off points along the way (trees, fences, telegraph wires, etc). The route will often follow the line of the prevailing wind.

Pigeon Hunting

The hunter has here positioned an arc of pigeon decoys to the maximum range of his shotgun, the shooting hide facing directly into the flightline.



The next step in the process is to set out your decoy pigeons. These can be bought from good hunting suppliers, and their level of sophistication is extremely variable. Some are nothing more than plastic pigeon silhouettes, while others are realistically proportioned 3D models that are fixed on bobbing pieces of wire to simulate an active bird. At the top of the range there are electrically animated models, that appear to flap and feed to an unsuspecting real-life pigeon. The essential point about the decoy is that it attracts the birds to the field, and gives them a sense that all is well.

To capitalize on the pigeons' flight paths, and the lure of the decoys, you should build a well-camouflaged hide that gives you clear shooting across or into their flightline. The hide needs to be well constructed, concealing you effectively from your prey while also allowing you free movement of the gun. Once you are in place – later afternoon is often the best time for hunting pigeon – then, hopefully, the birds will fly straight to your gun along the flightline. Those people who have become expert in such methods of pigeon shooting can achieve very large bags in a single day, up to several dozen birds.

Wildfowling

Wildfowling is another form of bird shooting that benefits from decoying. Goose decoys can be placed in a field when geese like to feed, the hunter then establishing himself in a hide or blind overlooking the field to await dawn or dusk. Duck decoys – about a dozen is a good number – can be sited on and around a lake or pond. (There are even advanced duck decoy models today that not only paddle around a pond, but

also dip their heads under the water and make authentic quacking sounds.)

Remember that you are now in a specific wildfowl environment, and a blind that would look perfectly at home in brushland might stick out like a sore thumb amid the reeds and grasses bordering a lake. Whatever you do, make sure that your blind or hide utilizes local foliage as camouflage or, at least, sympathetically patterned man-made camouflage.

Your problems intensify when constructing a wildfowling blind if there is a paucity of cover available, such as occurs in an open field where large flocks of geese come to feed. In these situations, you may have to dig a purpose-built pit in the earth, which you then camouflage with overhead cover to disguise your presence from the air. This process could well take some labour on your part, and you will probably have to do it the day before you go out on the hunt. Select a spot with good drainage, however, or you could come back in the pre-dawn darkness to find that your hideout has filled with water overnight.

If you do go wildfowling, ensure that you take with you appropriate shot. In many countries the use of lead shot for wildfowling is prohibited. This is on account of the fact that the lead pellets used by wildfowlers often end up being ingested by ducks, who naturally eat dirt and grit to aid their digestive processes. Ducks have then been observed to develop lead poisoning, often with fatal or certainly distressing results.

Some hunting organizations have contested the results of the studies, but the balance of scientific evidence seems to be overwhelmingly stacked against them. Therefore, it is our responsibility, as responsible hunters, to comply with the findings and use some of the many non-toxic forms of shot now available (see table on p206). When the early non-toxic varieties became mandatory, there was much despair among wildfowlers. Not only were the new cartridges expensive, but the steel and tungsten/iron shot inside them was much harder but lighter than lead. This meant that not only was the shot unsuitable for many shotgun barrels and chokes, but it had less range (its lightness meant that it slowed down more quickly in the air) and imparted less kinetic energy to the target.

Prone Hide

This hunter has created a simple scooped-out hide in a field, surrounding it with decoy birds and lining it with camouflage material to hide the freshly dug dirt.



For some wildfowlers, this led to them either giving up their hunting pastime or advocating non-compliance and running the risk of legal action (not to mention adding to the lead problem in the environment). Thankfully, science has marched on and there are now advanced non-toxic shot types that provide lead-like performance and which can be used with any chokes in a shotgun. When you go out wildfowling, however, ensure that you clear out any lead cartridges from your pockets, so you don't load the old type by mistake. If you are pass shooting – shooting at geese flying high overhead on the way to feeding grounds – ensure that you have heavy cartridge loads and a gun with full choke to give you the reach and penetration required. Geese feathers can be surprisingly resistant to shot, so you need to ensure you have the right cartridges and gun configuration to punch through.

Turkey Shooting

Wild turkeys are worlds apart from the creatures that tend to end up on people's plates over Thanksgiving and Christmas. They have excellent eyesight, great camouflage in woodland environments and can fly, so getting close to a wild turkey, never mind shooting one, can present a considerable challenge. They are also large creatures – an adult male (known as a 'gobbler' or 'tom') can weigh up to 11kg (24lb) – so you need a fully choked shotgun firing a heavy grade of shot (such as No.2) to bring one down convincingly.

You should start your turkey shooting by first carefully patrolling a known turkey area without a gun, armed only with a turkey call device. The turkey call imitates the various sounds made by a hen to attract a gobbler. To perform these calls convincingly takes some practice and knowledge, and if done improperly or

excessively, they are liable to make the gobbler go quiet and move away from the area. A response from the gobbler, however, will confirm that wild turkeys are indeed in the area, while droppings, feathers and tracks (usually found in muddy river banks) will provide further evidence. You now have the information you need to return for the hunt.

Camouflage

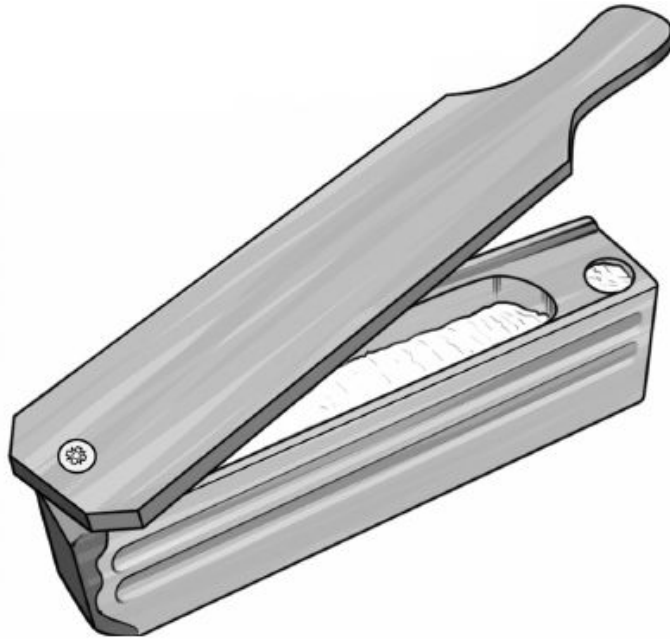
When you do go back, top to bottom camouflage is a must. Ensure that every scrap of skin is concealed, as the perceptive turkey will doubtless spot you and flee into the woods where you are unlikely to find it again. Have your gun loaded and at the ready. Note, too, that many turkey shooters also buy shotguns that are themselves covered with camouflage patterning.

For the hunt itself, use the call to attract a gobbler and then find a vantage spot such as a broad tree, with dimensions wider than your torso. Sit with the tree behind you to disperse your visual outline, and allow the turkey to approach within about 35m (115ft). Your target area is the turkey's head and neck. Note that when a turkey is strutting around, its neck is contracted, presenting an even smaller target. Wait until the turkey has finally stopped strutting and extends its neck, then take the shot.

Wildfowling and bird hunting is a fascinating struggle between you and highly evolved wildlife. You will need well-developed skills of stalking and shooting to bring down many bird species, and you might often go home empty handed. Such is the balance of nature, but as your experience grows, the empty days will become fewer and farther between.

Turkey Call

This turkey call device is one way to attract a turkey to a hunter's position. The lid is scraped across the box to produce a range of squawks.



Full Camouflage

This hunter, attempting to bag a wily wild turkey, is dressed in full camouflage, including a face mask – wild turkey can be spooked by a quick flash of bare skin. Note how he is using a crosspole support to steady his turkey gun.



6

The hunting techniques you use in the field have to be tailor-made for the species you intend to kill. Always remember the key point – an animal's senses are far more advanced than your own.

Hunting Techniques: Land Animals

In Chapter 2 we described some of the general principles of tracking animals in the wild, or establishing hides from which to hunt them. In this chapter we will become more species and terrain specific and look at what you need to do to take an effective shot against different types of prey.

Before focusing on the process of hunting itself, some cautions are necessary. Hunting trips into the wilderness can be uniquely satisfying experiences, but they bring with them undoubted dangers, from severe weather conditions to aggressive wildlife. Being unprepared for such threats can have dire consequences once you are a long way from home. Do your research before heading out into the field, noting all the local and regional problems that you might encounter, and take appropriate preparations. Make sure you put personal and group safety at the top of your list of priorities, regardless of the lures of the hunt. For example, if you have been tracking prey for several hours and believe you are getting close to the animal, but severe weather conditions set in, abandon the hunt and take shelter. Don't let pride or obsession cloud your judgement – there will always be another day to continue the pursuit.

The US Department of Agriculture gives the following useful advice for a safe hunting experience:

- Check weather reports before visiting the forest.
- Tell someone where you will be hunting and when you will return.
- Be familiar with the area you want to hunt.
- Dress properly and be prepared for the worst possible conditions.
- During certain seasons, hunters must wear hunter orange viewable from all directions.
- If accompanied by a dog, it should also wear hunter orange or a very visible colour on a vest, leash, coat or bandana.
- Check hunting equipment before and after each outing and maintain it properly. Familiarize yourself with its operation before using it in the field.

- Carry a spare set of dry clothing. Use layering techniques to prevent moisture while retaining body warmth. Always bring rain gear.
- Carry a first aid kit.
- Clearly identify your target before shooting. Prevent unfortunate accidents or fatalities.
- Put hunting plans in writing (dates, times, location and expected time of return). The Coast Guard recommends putting boating plans in writing, leaving one at home and one on your vehicle.
- Be alert when hunting near developed areas and trails. Other recreationists are in the forest as well.
- Avoid wearing white or tan during deer season. Wear hunter orange or another highly visible colour.

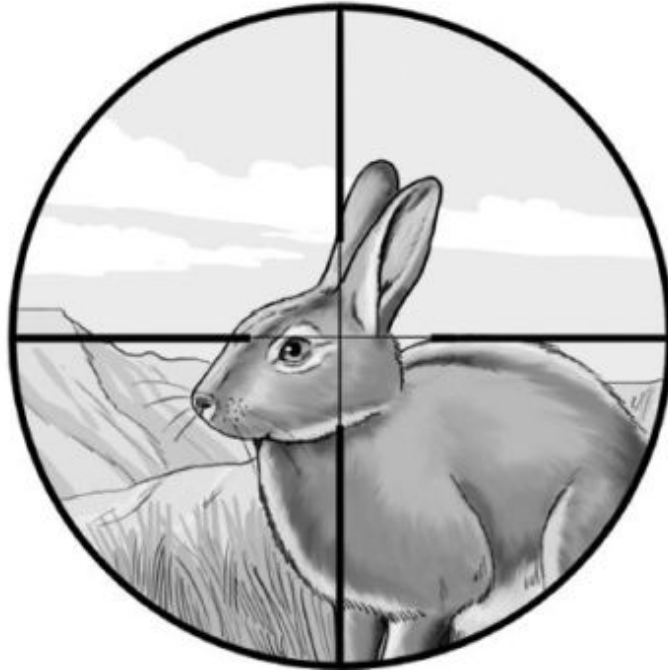
The points made here about firearm safety are particularly important. As the introduction to this book emphasized, remember that if you miss your target the bullet will continue onwards on its flight, possibly for hundreds of metres. Therefore be ultra aware of the backdrop behind the prey, and don't take the shot unless you are certain it is safe to do so.

Small Game

Small game such as rabbit and squirrel might not appear as the most satisfying of kills, but what they lack in individual meat content, they more than make up for in proliferation. US Army survival advice recommends that unless you have the tools to handle large prey, smaller animals should be the principal focus of your efforts (see feature box, p220). Trapping or snaring are ideal methods of hunting such creatures, particularly as nests or runs are often easily identifiable. For hunting with a gun, by contrast, the process is more a case of moving carefully and slowly through the wilderness, keeping a watchful eye out for movement and being ready to take the shot at any moment. The ideal gun for such small game is a .22 air rifle, a .22 rimfire rifle or a 20- or 12-gauge shotgun loaded with No.5 to 7? shot, depending on the size of the prey you intend to hunt.

Head Shot

For small game at close ranges, a head shot can be one of the best options for a quick dispatch, and means that no meat is lost.



When hunting for rabbits and hares, check through undergrowth, woodpiles, bushes, thick grass and anywhere else the animals are likely to hide. You might suddenly flush the creature from cover; take the shot quickly, as once the animal runs at full speed, it can be surprisingly hard to hit. On sunny days, move carefully around the corners of bushes and trees, as you might surprise a rabbit enjoying the sunshine. If you are shooting squirrels, it is often better to hunt in a pair or a small group. As soon as a squirrel spots you, it will often flick nimbly around the opposite side of a tree, avoiding your shot, but with a fellow hunter ready and in position you can usually outwit it.

US Army Tip: Hunting Animals

Unless you have the chance to take large game, concentrate your efforts on the smaller animals due to their abundance. The smaller animal species are also easier to prepare. You must know all the animal species that are suitable as food. Relatively few are poisonous, and they make a smaller list to remember. What is equally important is to learn the habits and behavioural patterns of classes of animals. For example, animals that are excellent choices for trapping, those that inhabit a particular range and occupy a den or nest, those that have somewhat fixed feeding areas and those that have trails leading from one area to another. Larger, herding animals, such as elk or caribou, roam vast areas and

are somewhat more difficult to trap. Also, you must understand the food choices of a particular species.

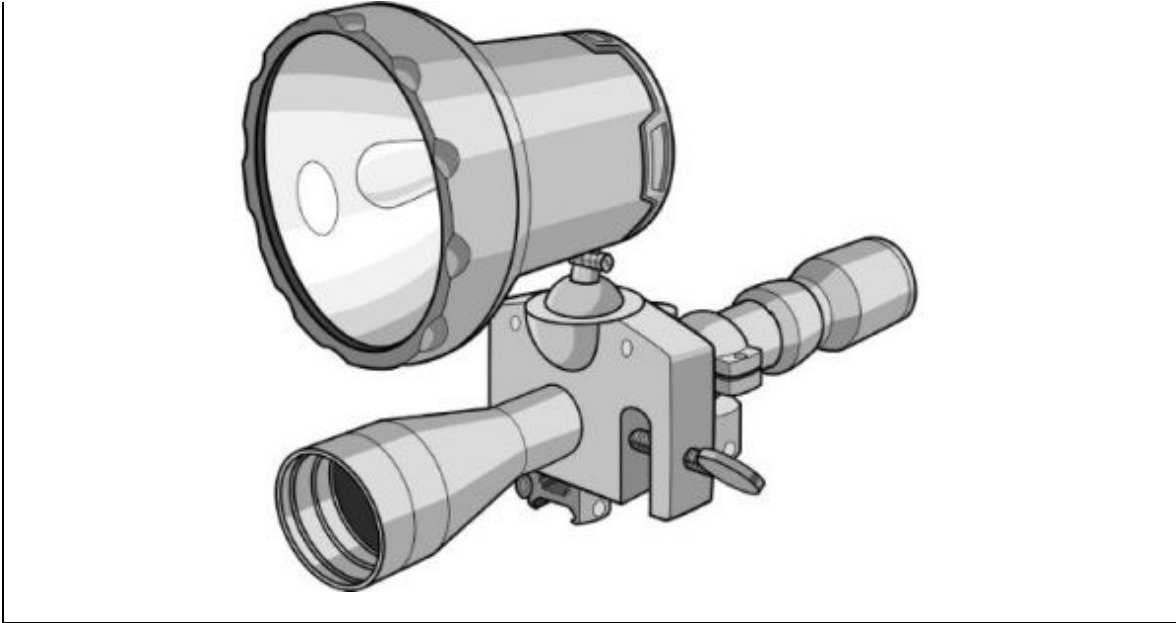
You can, with relatively few exceptions, eat anything that crawls, swims, walks or flies. The first obstacle is overcoming your natural aversion to a particular food source. Historically, people in starvation situations have resorted to eating everything imaginable for nourishment. A person who ignores an otherwise healthy food source due to a personal bias, or because he feels it is unappetizing, is risking his own survival. Although it may prove difficult at first, a survivor must eat what is available to maintain his health.

Perfect Timing

The best times to hunt rabbits and squirrels, and indeed many small prey types, is at dawn and in the late afternoon, when they typically feed. They can also be active after a spell of rain, but rather like humans they prefer to stay hidden away when the weather is poor. Note that you can 'call' squirrels – imitate their vocalizations to draw them to your location. Squirrel call devices are available to purchase, although less effective improvisation is possible simply by clicking two stones together. Make two long series of rapid 'chuck' noises, then a few shorter bursts, and then leave about a minute's silence before repeating the sequence again. If this process doesn't produce a squirrel within about five minutes, move to a different location.

Sight Illumination

A combined telescopic sight and lamp can be useful for night-time hunting, although the sight mounts need to be very solid to take the weight of the lamp.



Foxes are another animal that can be called – you can purchase devices that mimic the sound of an injured rabbit, a natural magnet for a hungry fox. However, foxes are extremely wily and cautious creatures with superb senses, and you will have to stay both still and patient before one will put itself in your sights. Many hunters go after foxes at night, when they frequently move about, using the technique of ‘lamping’. Here, the landscape is scanned with a powerful spotlight; when the beam falls upon the fox, the animal will often go completely still, mesmerized by the glare of the lamp and easily dispatched with a rifle shot. Obviously, shooting at night brings its own set of risks. You need to be doubly sure that you can identify a backstop for your shot, and never shoot just at the animal’s reflected eyes – you must be able to identify the body as well.

Arctic Fox

The Arctic Fox blends effortlessly into its snowy surroundings, so the hunter needs to look for movement and shadow to give it away.



Another animal that can be successfully hunted at night is the raccoon, native to parts of the United States and Canada. Hunters move through the animal's woodland habitat carrying headlamps and accompanied by coon-hunting dogs. Raccoons are chased up trees, where they are dispatched with a relatively easy shot from a .22 rimfire rifle or similar weapon. Raccoons are also very curious creatures, lending themselves to trapping and snaring.

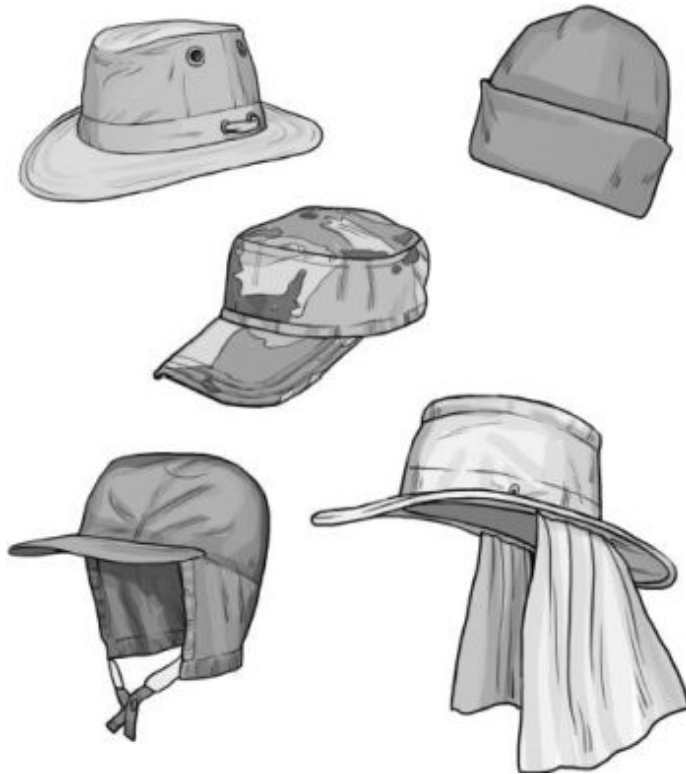
White-tailed Deer

The White-Tailed Deer is widely distributed throughout the Americas, but is also found in northern/eastern Europe and New Zealand.



Types of Headgear

Hunting hats should serve two main purposes: 1) they should protect you from the elements (including sunlight); and 2) they should provide some degree of camouflage for the head and face.



Deer Hunting

Deer are one of the world's most popular animals to hunt, and also one of the most demanding. Most species of deer are highly sensitive creatures, jumpy and alert to even the slightest changes in their environment, or to minor movements in the terrain. For this reason, the successful hunting of deer requires excellent fieldcraft, the right equipment and a deep knowledge of their species-specific behaviour. Regarding the latter, make sure that you have a rifle capable of handling the deer you intend to hunt. The calibre can vary tremendously, as deer range in adult body weight from 10kg (22lb) to several hundred kilograms, depending on the particular species. The right calibre to use will often be dictated by local or national hunting legislation, but check first with a reputable gun store or experienced hunter.

The first stage in any deer hunt is identifying the areas in which deer are active. In woodland deer, such as the roe, sika and American whitetail, visual signs typically include:

- Established tracks through the woodland, with identifiable hoof prints.
- Dung (usually short, round pieces of dung with a pointed end, deposited in piles, but there are variations between species).
- Deer hair caught on branches.
- Signs of damage to tree bark caused by teeth or antlers.

If time and opportunity allow, it is always worth making non-hunting expeditions into the intended hunting ground to gather evidence of deer territories and also, hopefully, to acquire visual contact with individual deer or herds. Naturally, the signs of deer presence vary significantly in different habitats. Across the world, deer are found in stark mountain wildernesses, tropical savannah, north Asian taiga and tundra, and even in the midst of tropical rain forests. Hunting deer in these contrasting terrains repeats the need for prior research – if you are inexperienced in such environments, however, it is essential that you only undertake hunting in the presence of an experienced guide.

Closing to the Kill

There are three main methods of hunting deer – stalking, shooting from a hide and flushing. Given the deer's sensitivity to movement, stalking is transparently the more demanding of the techniques. Camouflage clothing is a good idea; the modern photo-realistic print varieties, which depict woodlands leaves and patterns on the fabric, are excellent investments, and you should include a matching facemask and camouflage gloves. Having said this, be aware that seasonal changes can have dramatic effects on the colour composition of the terrain, and a camouflage that is perfectly suited to use in early autumn might actually render you more conspicuous in the dead of winter.

Mountain Hunting

A red deer presents itself in a mountainous habitat. Deer hunting in these environments can be arduous, so make sure that your clothing is up to scratch and acquire an essential knowledge of survival techniques.



US Army Tip: Winter Clothing

C – *keep clothing clean.* Clothes matted with dirt and grease lose much of their insulation value. Heat can escape more easily from the body through the clothing's crushed or filled up air pockets.

O – *avoid overheating.* Adjust your clothing so that you do not sweat. Do this by partially opening your parka or jacket, by removing an inner layer of clothing, by removing heavy outer mittens or by throwing back your parka hood or changing to lighter headgear. The head and hands act as efficient heat dissipaters when overheated.

L – *wear your clothing loose and in layers.* Several layers of lightweight clothing are better than one equally thick layer of clothing, because the layers have dead-air space between them. The dead-air space provides extra insulation. Also, layers of clothing allow you to take off or add layers to prevent excessive sweating or to increase warmth.

D – *keep clothing dry.* Wear water repellent outer clothing if available. Before entering a heated shelter, brush off the snow and frost. On the march, hang your damp mittens and socks on your rucksack. You can also place damp socks or mittens, unfolded, near your body so that your body heat can dry them. In a campsite, hang damp clothing inside the shelter near the top, using drying lines or improvised racks. You may even be able to dry each item by holding it before an open fire.

– FM 21-76, *Survival*

Cold Weather Clothing

In harsh, cold-weather environments, wear layers of protective clothing, including a thermal fleece layer for warmth and an outer waterproof layer (jacket and trousers) to keep out the wet. Protection for the head and hands is also essential to reduce heat loss from the extremities.



Spotting Scope

Although binoculars have become more common for hunting use, some hunters still prefer telescopes such as this one. They pack up in compact fashion, and can provide high magnification when viewing distant targets.



The manner in which you move when deer stalking is critical to the success of your hunt. A single incautious movement or a twig that cracks underfoot can be enough to guarantee that you go home without a kill. Therefore, move slowly and extremely carefully, considering the placement of each and every step. Stay downwind of the deer at all times. On some occasions, this can involve a very lengthy and time-consuming diversion in your route. Don't be tempted to take shortcuts, however, as the deer will pick up on your movements or your scent and disappear from view.

High Seat

This most basic of high seats consists of a platform ladder lashed firmly to a tree trunk. It gives the hunter no protection from the elements.



Timber High Seat

Here we have a sophisticated high seat tower purposely made from timber. The elevation provided by high seats ensures that the shot always has a safe backdrop (the earth below).



Ambush Hunting

An alternative to stalking is ambush hunting – remaining hidden in one location and waiting for a deer to appear. Methods of constructing some basic hunting hides are covered in Chapter 2, but a more substantial alternative is a high seat. This is essentially a wooden platform constructed many feet off the ground (accessible via a ladder), in which the hunter can observe the terrain around him and from which he can take a shot at deer that wander through the surrounding woodland. Such hides tend to be built by professional hunting groups and can have surprisingly palatial interiors. Others, however, can border on the dilapidated – check the structural integrity of any such hide before climbing up and occupying it.

High Seat

High seats provide a safety advantage in that the shooting angle means the earth itself acts as a backstop, reducing the possibility of bullet overflight. Make sure that the high seat is properly sited in an area of known deer activity, and that you have clear fields of fire around the seat that are not obscured by nearby trees. Of course, you don't necessarily need an aerial vantage point to hunt deer; one of the camouflaged ground-level hides described previously in Chapter 3 will also suffice.

There are other options if the static hunting of deer doesn't appeal to you. You can, for example, drive a deer on to a waiting shooter when you have two or more people in your hunting party. At least one person walks through the woodland, ideally with a dog, pushing down a known deer track. The aim is to make the deer move ahead until it reaches a kill point, usually a place where it emerges from the thick foliage into a clearing or field. There, the other hunter is waiting to take the shot when the animal pauses. Hunters can also purchase various deer call devices, which either work to attract the animal to a specific place of your choosing or elicit a response call to pinpoint its location.

Taking the Shot

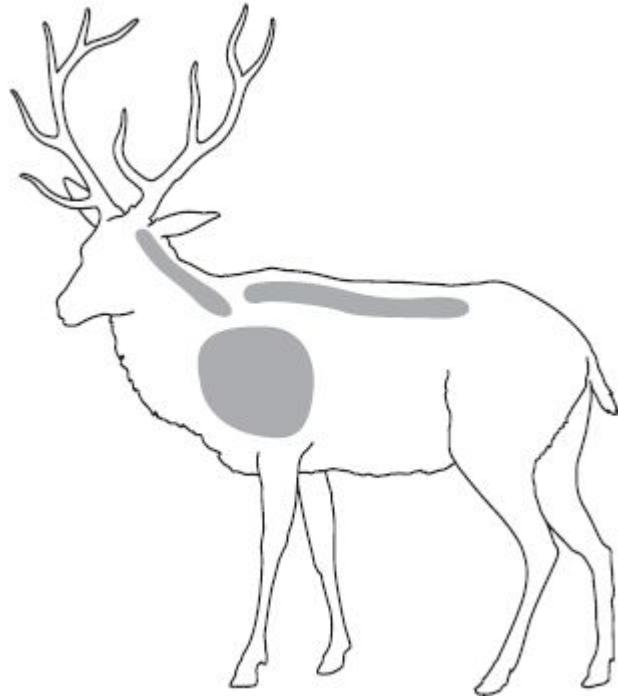
Spotting a deer can be no easy task. They move effortlessly and cautiously through the terrain, and their fur tends to blend in extremely well with the background. Watch out for subtle signs of movement within foliage, or for patterns of colour that don't quite match the surroundings. These indicators might be enough for you to use your telescopic sight or binoculars to identify the deer.

At this point, you need to assess whether the deer can be shot or not according to local legislation (usually based on the gender and age of the deer), which will also specify the seasons in which deer can be hunted legally. Prohibitions are most strictly enforced during the breeding season.

If the deer in front of you can be shot legally, however, you now need to consider shot placement. For a clean kill, you want to put your shot into the animal's heart, lungs or spine (its central nervous system). If the animal is presented from the side, the main target areas are just above the foreleg or along the ridge of the neck. The former will bring the deer down quite quickly as the bullet hits the heart and lungs, whereas the latter – if it breaks the animal's neck – will drop it instantly on the spot. If shooting the animal from the front, an impact point between the forelegs ensures direct impact on the internal organs, and shooting from behind presents the back of the neck as the best target. Fix your sights on the impact point, breathe steadily and squeeze out the shot.

Shot Placement

When shooting a deer, the shaded areas show the best locations for shot placement and a quick kill. Access to these targets depends on the relative position of the deer.



Blood Trail

A blood trail is clearly etched into the snow. The heaviest concentration is over the point of impact, and it thins as the animal moves off.



After the Shot

In an ideal world, the shot will take out the deer instantly. The animal might fall over then run a few metres and take cover behind a tree or bush. In these situations, don't spring up immediately and start running after the creature – this will just encourage it to use its dying energies to get away from you, making it harder for you to track.

After about three minutes, get up and walk towards the spot where you saw the deer hit. Hopefully it will be lying dead not far from this point (or on the spot itself); touch its eye with a stick or knife to see if there is a reaction, indicating that it is not quite dead. Any wounded animal should be dispatched immediately, either by a shot to the back of the neck (at such close ranges, sight along the side of the barrel rather than use the telescopic sight) or, if you have the experience and the animal is not thrashing about dangerously, by cutting its throat.

The worst-case scenario is if the deer is wounded but not critically so, and once recovered from the initial impact simply runs off into woodland. If this happens, wait a few minutes before venturing out to the impact point and marking it with a cross of twigs so you can find it again if you need to. Then you have to follow the blood trail left by the animal, working from blood spot to blood spot until you find the creature either

dead or in a position for you to take another shot. You can improve the accuracy of the tracking by using some of the modern devices available. Thermal-imaging scopes or binoculars, for example, can help you spot still-warm wounded prey even if it has tucked itself away deep into thick foliage. There are also blood-revealing sprays that, when they come into contact with even the smallest spot of blood on the ground, show it up in a highly visible fluorescent colour. However, whatever technologies you choose, you will have to be patient in the hunt. It can take some hours to track down a wounded animal, but never abandon the process, no matter how long it takes – your first responsibility is to ensure that the animal is put out of its suffering.

Wild Sheep and Goats

Hunting wild sheep and goats, such as bighorn, mouflon and chamois, is generally not for the unfit. These creatures can inhabit remote and inaccessible regions, and often live at high altitudes among mountain ranges. (For this reason, many hunters use four-wheel drive vehicles to take them to the hunting site.) Furthermore, they are hyper-vigilant animals, their senses honed to perfection in their lookout for big cats, which are their main predators.

You are rarely likely to take a close-range shot against a wild sheep or goat, hence you need a rifle that can deliver a good long-range punch at a flat trajectory. As there is some considerable variation in the size and weight of wild sheep and goats, you will also need to take expert advice before purchase of weapon and ammunition.

Typically, goats require heavier calibres than sheep, such as the 7mm/.270, .30-06 or .308.

Stalking Goats and Sheep

Stalking is generally the only method of hunting these creatures. Given the nature of the terrain, you should only attempt to hunt in mountains if you have experience or if you are in the presence of a seasoned guide. Put safety first at all times, and don't attempt to negotiate terrain that presents a significant danger from rockfalls, avalanches or drops. Remember that if you are scrambling awkwardly across terrain, prey will hear and see you well before you get within range. Also remember that mountain weather is extremely changeable, so ensure that you have excellent waterproof and windproof clothing, a means of providing emergency shelter (such as a survival bag) and some survival food.

Bighorn Sheep

The Bighorn Sheep is a popular and elusive prey for hunters in North America. The species was nearly wiped out by hunting in the nineteenth century, but has now recovered through conservation.



For stalking wild sheep and goat, the best method is to find a good vantage spot on the upper slopes, hidden from view where possible, and scan the lower slopes with a pair of powerful binoculars or spotting scope. A keen eye is essential here, as wild sheep and goats often blend effortlessly into the background. If one is spotted just out of shot range, you need to close the distance by moving up to a shooting point with extreme stealth, staying out of view as much as you can. When you do get into a position to take the shot, make sure that if the animal falls, it won't tumble away out of reach – there is no point in shooting an animal if you cannot safely retrieve it afterwards.

Wild Boar

Wild boar is an exciting prospect for the hunter. They can be genuinely dangerous animals, being heavy (some species can reach weights of more than 300kg/661lb), aggressive and armed with extremely sharp tusks that can inflict serious flesh wounds on an opponent. Although attacks on humans by wild boar are relatively rare, when threatened or wounded, they can make a potentially lethal charge.

Boar tend to live in forest regions, and are elusive animals. Signs of their presence include tracks (particularly around watering holes), disturbed earth (they like to dig for

roots and tubers), faeces and mud wallows. In terms of hunting methods, the hunter can stalk on his own or in a small group (which is recommended), although given the sensitivity of the animal to noise and movement, this process needs performing with a very steady and careful approach.

Driving with dogs is a more common method, but it requires multiple shooters. The hunters first identify a physically defined wooded area into which boar tracks lead, but with no obvious signs of exit. Then one group of hunters, with dogs, drive in from one side, while the shooters wait on the other side overlooking a clearing with guns at the ready, and shoot the boar as they emerge. Alternatively, some hunters prefer to hunt them from high seats at night, downing the animals as they emerge to feed in open areas.

Mountain Goat

Mountain goats can climb up near vertical slopes with astounding agility. When hunting these creatures, be careful not to follow them into dangerous terrain.

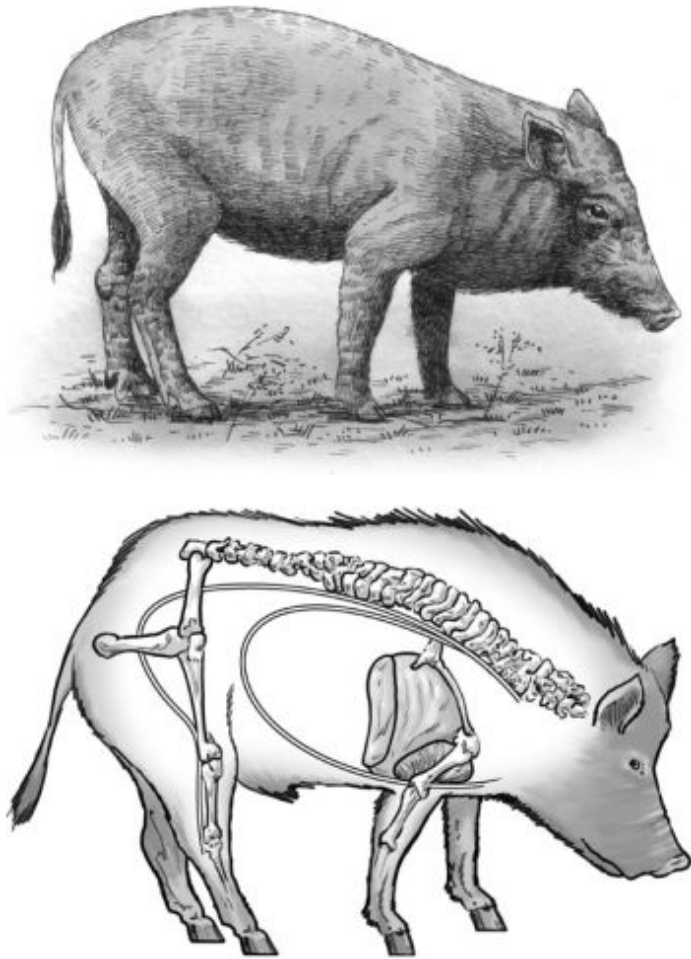


Whatever the hunting method, the choice of weapon is important for wild boar. Cartridges such as the .270, .30-06 and .308 are all practical, depending on the boar species, and shotgun slugs are also effective at close ranges. The shot is usually taken over open sights for fast target acquisition, and some hunters prefer to use a semi-auto weapon, providing a rapid follow-up shot if the boar makes a charge. An

alternative, popular in Europe, is a three-barrelled weapon known as a combination gun, which combines a rifle barrel and two shotgun barrels – the rifle provides a longer-range reach while the shotgun components enable the hunter to take on the boar at close ranges.

Wild Pig

The image of the wild pig's internal organs shows clearly where shot placement needs to be: straight through the shoulder or (for a spine shot) along the upper back.



Large Ungulates

Ungulates such as caribou, elk and moose are substantial kills for any hunter and make an excellent food source for a group of people. They are often some of the best meat available in an otherwise stark wilderness environment. These animals provide a

lot of meat in one go, so a hunter should always ensure that the volume of food he acquires in a kill can be handled practically, either eaten within a safe time frame or stored for later.

The naming of these animals can be a little confusing and needs some clarification. The American elk is also known as the wapiti, and is a large species of deer native to North America and East Asia. The moose is the famously round-nosed, awkward-looking resident of North America and Eurasia, but confusingly this creature is also known as elk in Scandinavia. Finally, there is the sub-Arctic caribou, known in many other English-speaking lands as the reindeer.

Hunting Elk

The American elk is a sizeable deer. Its sub-species show some size variation, but the largest variety – the Roosevelt elk – can weigh up to 600kg (1320lb) and stand more than 1.5m (5ft) at the shoulder. Given its size and power, elk need a powerful gun to bring them down with confidence, something in the region of .30-06 or .300 Magnum. Yet even though the creature makes a large target when spotted, actually detecting one is not as easy as it might sound. Elk are both vigilant and keen-nosed, meaning that a hunter must use all the powers of fieldcraft to work his way into shot range. If the elk gets wind of someone approaching, it will quickly flee the area, putting much distance between it and the hunter.

US Army Tip: Using Animal Skins

The selection of animal skins in a survival situation will most often be limited to what you manage to trap or hunt. However, if there is an abundance of wildlife, select the hides of larger animals with heavier coats and large fat content. Do not use the skins of infected or diseased animals if at all possible. Since they live in the wild, animals are carriers of pests such as ticks, lice and fleas. Because of these pests, use water to thoroughly clean any skin obtained from any animal. If water is not available, at least shake out the skin thoroughly. As with rawhide, lay out the skin and remove all fat and meat. Dry the skin completely. Use the hindquarter joint areas to make shoes and mittens or socks. Wear the hide with the fur to the inside for its insulating factor.

– FM 21-76, *Survival*

Elk Call

This device is used for calling a bull elk. One problem of recent years is that with more hunters trying to call elk, the creatures are becoming increasingly wary of responding to the calls.



Bull elk are nevertheless somewhat vulnerable during the rutting season. One of the best descriptions of why this is so comes in the epic and highly recommended work, *Hunting* (1980):

Despite their fondness for quiet, however, bull elk in rut emit loud, unmistakable bugling or high-pitched trumpeting calls, almost a cross between a squeal and a deep whistle; they start on a low note and go up by overtones through four steps, before descending the scale again. The volume increases with the pitch; the crescendo is a deafening scream. Bulls challenge each other by this means, much as red deer stags do by roaring; individual animals are attracted to the source of the noise, especially if it comes from some point downhill.

– Robert Elman (supervising ed.), *Hunting* (Marshall Cavendish, 1980) p.206

Bull elk also create noise by rubbing their antlers against trees, or clashing their antlers against bushes, trees or saplings (ibid, p.207). These auditory signals together provide a means for a hunter to locate the elk, while elk call devices can draw in a rutting bull to a specific location. Elk calls are whistle-like instruments, available from many good hunting suppliers (in the relevant country, of course), which imitate the sound of a bull elk in the rut. By imitating the animal's call while remaining well concealed in trees or bushes, the hunter can attract a 'rival' bull into the vicinity. Often, elk are hunted in this way by a pair of hunters. One person will operate the call (usually an expert guide who knows how to reproduce the call authentically), and the

other acts as the shooter and spotter, scanning the landscape with binoculars on the lookout for the elk.

Moose

The North American moose may appear a docile prey, but exceptional powers of scent and hearing, and the ability to make a speedy getaway, means that it should not be underestimated.



Caribou and Moose

Caribou present something of a lesser challenge to the hunter, particularly those creatures that live in open terrain rather than forests (the forest creatures tend to be more wary). Essentially, the process of hunting these creatures is similar to that for deer. Stalk them carefully into shot range, remaining out of sight as much as possible, and staying upwind of the creature. As long as you practise your fieldcraft carefully, the caribou should be a predictable target. Furthermore, the quality of the meat is excellent – it is classed as a delicacy in many restaurants.

The moose is a very different beast. They are rather solitary creatures and so the signs of their presence can be more scattered than those of group animals. Moose are also easily spooked, and their great endurance and ability to swim means that you are unlikely to catch up with one if it runs away from you with determination. Stalk it carefully in its woodland environment, listening out for the noise of its walking across sticks and branches, and looking out for its tracks in snow and mud. As with elk, calling techniques can also be applied to bring a bull to your location. There are two

types of call: a rival bull call, or a cow call to draw the bull to what it thinks is a female. Although calls can be made from natural materials, electronic versions are also available that are easy to use and have an authentic sound or an actual recording of the animal. With any calling technique, however, you need to understand the call patterns of your prey intimately, and not fall into the illusion that the call will do all the hard work of bringing the prey direct to your feet. In fact, if used inappropriately, a call is more likely to scare off an animal.

Northern Caribou

Caribou are precious kills for the hungry hunter. A single large specimen can deliver about 45kg (100lb) of edible meat, so think carefully about butchery and about storage before you hunt such a creature.



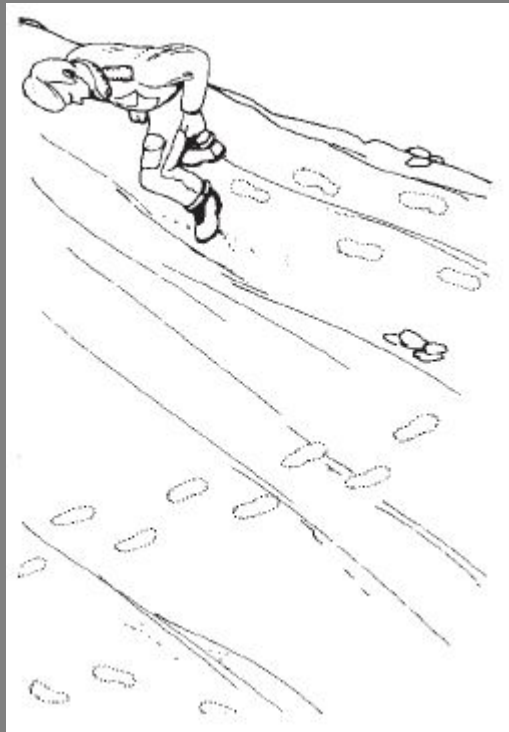
US Army Tip: Walking Up Scree Slopes

(1) Ascending scree slopes is difficult and tiring and should be avoided if possible. All principles of ascending hard ground and snow apply, but each step is carefully chosen so that the foot does not slide down when weighted. This is done by kicking in with the toe of the upper foot (similar to stepkicking in snow)

so that a step is formed in the loose scree. After determining that the step is stable, weight is transferred to the upper leg, the soldier then steps up and repeats the process with the lower foot.

(2) The best method for descending scree slopes is to come straight down the slope using a short shuffling step with the knees bent, back straight, feet pointed downhill and heels dug in. When several climbers descend a scree slope together, they should be as close together as possible (one behind the other at single arm interval) to prevent injury from dislodged rocks. Avoid running down scree as this can cause a loss of control. When the bottom of the slope (or run-out zone) cannot be seen, use caution because drop-offs may be encountered.

(3) Scree slopes can be traversed using the ice axe as a third point of contact. Always keep the axe on the uphill side. When the herringbone or diagonal method is used to ascend scree, the axe can be used placing both hands on the top and driving the spike into the scree slope above the climber. The climber uses the axe for balance as he moves up to it, and then repeats the process.





Vantage Point

When hunting in mountainous or hilly areas, it can work in your favour to hunt down from a high point, which will give you good visual access to the whole surrounding area and will make stalking less tiring.



Bear

Bear hunting, as with many forms of large game hunting, is heavily restricted in many countries. Rightly so, for unrestricted hunting led to the decimation of global bear

populations, and even today many species are threatened by illegal hunting, especially in Eastern Europe and Asia. When bear hunting is allowed it must be done respectfully, both because of the magnificence of the animal and because of the dangers involved. A wounded bear at close range is a terrifying prospect, and one that could easily kill a complacent hunter. In terms of the rifles used to bring down bear, practical calibres include .270, .308, .30-06 and .358 Winchester, which are all fit for purpose.

Bear Hunting

Bear hunting is a strictly controlled activity in most countries. When permitted, it should be pursued with extreme caution, as the bear is a dangerous opponent when wounded. Use a powerful rifle of about 7.62mm (0.3in) calibre.



Human contact with bears is extremely variable in nature. In areas where bears are protected, or where their habitat encroaches on that of humans (or vice versa, depending on perspective), bears can become quite gregarious around people, especially when food is available. This in itself leads to many problems – every year dozens of bears are unfortunately shot when they quite naturally help themselves to food left out around human dwellings. Actual bear attacks on humans are thankfully rare, although well publicized when they do occur. Most happen when a walker or hunter inadvertently comes across one at close range, startling the creature; the chances of attack are commensurately higher if the bear is female and with cubs.

Bear Markings

These deep marks, cut into the bark of a birch tree, were made by a bear. The marks are one way in which a bear delineates its territory.



US National Parks Advice: Encountering a Bear at Close Range

BEAR WARNING BEHAVIOR: If the bear clacks its teeth, sticks out its lips, huffs, woofs or slaps the ground with its paws, it is warning you that it is nervous about your presence and that you are too close. Heed this warning and back away.

DO NOT PANIC! DO NOT RUN!: Do not run, shout or make sudden movements. You don't want to startle the bear. Do not run! You cannot outrun a bear. Running may trigger a chase response in the bear. Bears in Yellowstone chase down elk calves all the time. You do not want to look like a slow elk calf.

BACK AWAY SLOWLY: Immediately but slowly back away. Often times, slowly putting distance between yourself and the bear will defuse the situation.

PREPARE YOUR BEAR SPRAY: Draw your bear spray from the holster, remove the safety tab and prepare to use it if the bear charges.

SHOULD YOU CLIMB A TREE? Climbing a tree to avoid an attack might be an option but is often impractical. Remember all black bears and most grizzly bears can climb trees (if there is something up the tree that the bear really wants). Running to a tree or frantically climbing a tree may provoke an un-aggressive bear to chase you. Many people have been pulled from trees before they can get high enough to get away. Remember, you have probably not climbed a tree since you were 10 years old, it is harder than you remember. In most cases climbing a tree is a poor decision.

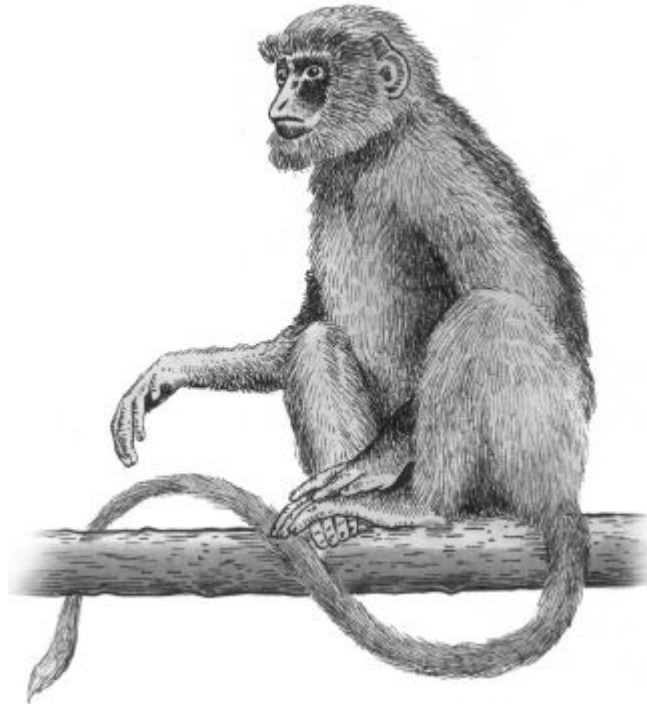
- www.nps.gov/yell/naturescience/upload/surprise_encounter.pdf

Conversely, bears in remote wilderness settings can be extremely wily and difficult to spot. They also have a sharp sense of smell and hearing, although their eyesight isn't particularly acute. Your first step in hunting bear, therefore, is to identify an area in which they are found. Often, you can do this with the advice of local guides, but physical signs include the following:

- Tracks and scat
- Signs of digging for roots and tubers
- Carcasses of animals exhibiting major claw and teeth marks
- Claw or teeth marks on trees, created by bears marking their territory
- Trails leading naturally through woodland or forest

Endangered Prey

Never hunt any creature that is endangered or at risk. The Silvery Gibbon, for example, is at risk of extinction from habitat loss and illegal hunting. Ultimately, true hunters invest in conservation as much as hunting itself.



US Army Tip: Travel Through Jungle Terrain

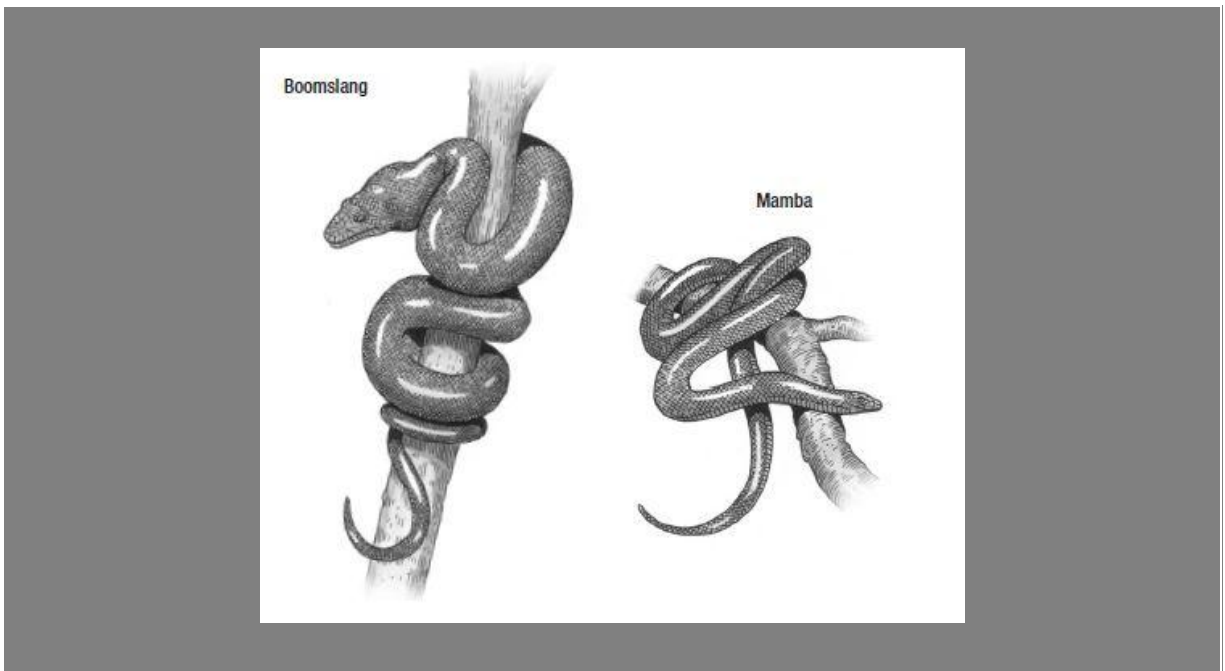
With practice, movement through thick undergrowth and jungle can be done efficiently. Always wear long sleeves to avoid cuts and scratches. To move easily, you must develop 'jungle eye,' that is, you should not concentrate on the pattern of bushes and trees to your immediate front. You must focus on the jungle further out and find natural breaks in the foliage. Look through the jungle, not at it. Stop and stoop down occasionally to look along the jungle floor. This action may reveal game trails that you can follow. Stay alert and move slowly and steadily through dense forest or jungle. Stop periodically to listen and take your bearings. Use a machete to cut through dense vegetation, but do not cut unnecessarily or you will quickly wear yourself out. If using a machete, stroke upward when cutting vines to reduce noise because sound carries long distances in the jungle. Use a stick to part the vegetation. Using a stick will also help dislodge biting ants, spiders or snakes. Do not grasp at brush or vines when climbing slopes; they may have irritating spines or sharp thorns.

– FM 21-76, *Survival*

If you do come across such signs, especially if they are fresh, have your rifle at the ready, as bears could be close by and might not take kindly to your wandering through their territory. Otherwise, try to find vantage spots from which you can scan the terrain

with binoculars or your scope, trying to spot a bear. Be especially vigilant if you spot an animal carcass. Watch this point carefully, as bears are natural scavengers and might reveal themselves when they come to feed.

When the opportunity for a shot does arise, only take it if you are extremely confident of a solid, deep-penetrating hit in a vital area. If you have a bolt-action rifle, reload straight away and prepare for a follow-up shot. Needless to say, approach an apparently dead bear with extreme caution, monitoring for any signs of movement and keeping your weapon at the ready.



Extreme Terrains

In this chapter we have mainly focused on hunting in Europe, North America and northern Asia. However, every year thousands of hunters from the West go further afield to participate in safaris in Africa or hunt in tropical areas of South America or Southeast Asia. The species that can be hunted in these regions are enormously diverse and are largely beyond the scope of this book, although a few general points can be made.

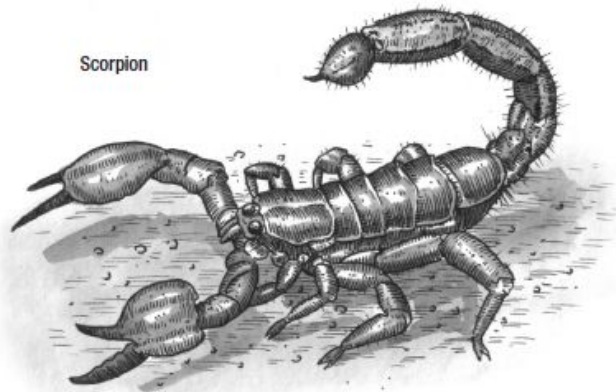
US Army Tip: Desert Hazards

13-40. There are several hazards unique to desert survival. These include insects, snakes, thorned plants and cacti, contaminated water, sunburn, eye irritation and climatic stress. 13-41. Insects of almost every type abound in the desert. Man, as a source of water and food, attracts lice, mites, wasps and flies. They are extremely unpleasant and may carry diseases. Old buildings, ruins and caves are favourite habitats of spiders, scorpions, centipedes, lice and mites. These areas provide protection from the elements and also attract other wildlife. Therefore, take extra care when staying in these areas. Wear gloves at all times in the desert. Do not place your hands anywhere without first looking to see what is there. Visually inspect an area before sitting or lying down. When you get up, shake out and inspect your boots and clothing. All desert areas have snakes. They inhabit ruins, native villages, garbage dumps, caves and natural rock outcroppings that offer shade. Never go barefoot or walk through these areas without carefully inspecting them for snakes. Pay attention to where you place your feet and hands. Most snakebites result from stepping on or handling snakes. Avoid them. Once you see a snake, give it a wide berth.

– US Army, FM 30-05.70, *Survival* (2002)

As an absolute rule, only shoot officially approved prey types. Many creatures in exotic parts of the world are appallingly endangered, so you must never add to this problem. Follow the instruction of an experienced guide, familiar with local customs and animal behaviour. Remember that you are in a foreign land, so treat the people, wildlife and environment around you with absolute respect and within the strict confines of the law. Also, take special care in unfamiliar terrains and climates. The heat of equatorial regions, for example, can bring on dehydration and heat exhaustion with terrifying rapidity. Tropical jungles present a range of threats from disease and dangerous creatures unmatched anywhere else in the world. Your guardian in these instances is not only a local guide, it is also your prior research. Furthermore, make sure that your weapons are squarely pitched at the prey you intend to tackle. By taking all the right precautions, you can ensure that your hunting trip abroad turns out both safe and profitable.

Scorpion



7

Just as you have to be efficient in your hunting, the same efficiency must be applied to food preparation.

Butchering, Smoking and Preparing Food

Once you have made sure that an animal is dead, you can begin preparing the kill for eating. This means executing the following four steps as quickly as possible to ensure maximum preservation of the meat:

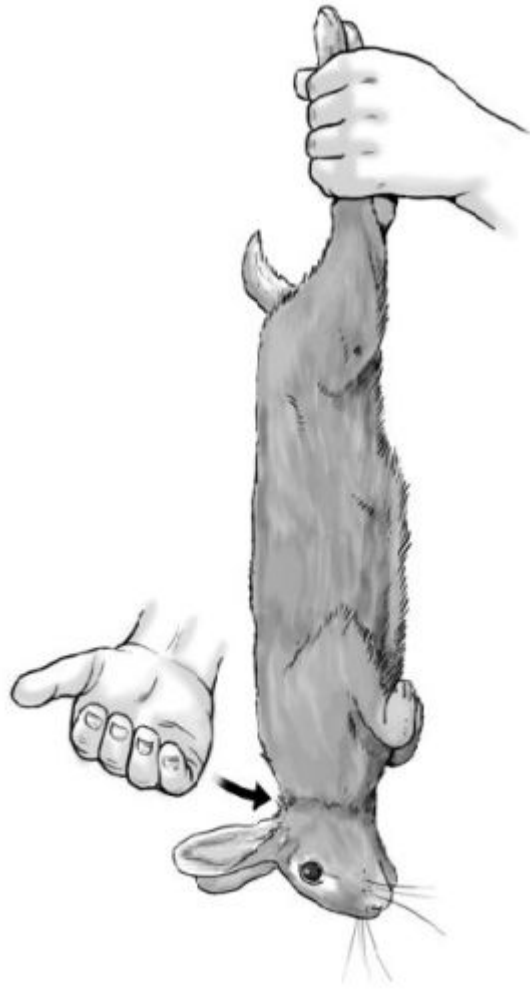
- Bleeding
- Gutting
- Skinning
- Jointing

Bleeding

As its name describes, bleeding is the process of extracting blood from the kill. Leaving blood inside a dead animal will accelerate the rotting process, so bleeding needs to be done thoroughly. Position the kill so that the head is facing downwards, as it will bleed more efficiently this way. For large animals, bleeding is more effective if the creature is hung from a frame. A convenient tree can serve this purpose, but you can also construct a bleeding frame. Using five strong logs of a similar height (longer than the carcass when it is stretched out), lash two together, creating an inverted 'V' shape at the top. Do the same for two more logs to form the opposite side of the frame, and then fit the final log into the space at the top of the 'V'. The carcass can be tied to the top log by the hock, allowing it to hang down. Obviously, if you haven't the strength or manpower to hang up a large animal, try at least to position it on a slope with the head facing downwards to encourage drainage.

Dispatching a Rabbit

A rabbit can be killed quickly and humanely by a sharp blow to the back of the neck, chopping in a slightly downward direction.



Draining the Blood

By stringing up a deer carcass on a dedicated frame, it can be bled more efficiently, with gravity assisting the draining process.



Nutritional Value of Blood

Animal blood is an excellent source of vitamins and minerals, so it should not be wasted. However unpalatable it may seem, in a survival situation consuming animal blood will provide you with essential micronutrients, including iron and salt. It can be added to soups, stews or sauces, or used to make sausages.

Place a container beneath the head for the blood, then cut the jugular or carotid artery. Slit the throat in a 'V' shape across the neck or from ear to ear, avoiding the windpipe (if the windpipe is cut, the stomach contents may contaminate the blood). A large animal, such as a cow, can contain around 16 litres (28 UK pints) of blood, so ensure that your container is big enough to take the volume or have several containers to hand.

Gutting

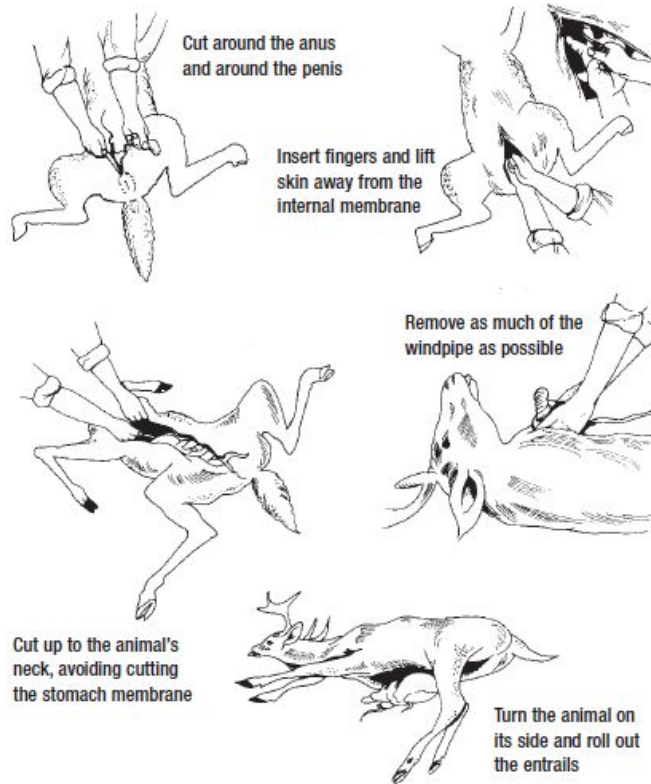
An animal can be gutted while it is suspended for bleeding. Gutting is important because if the entrails and offal are not removed, they can taint the meat (through

stomach and bowel contents). Remove the testicles from male animals as well as the musk glands, as these may also contaminate the flavour of the meat. Cut a circle through the skin around the genitals and anus, taking care not to cut into the intestine. Next, insert two fingers into the cut and, with the knife positioned with the blade facing away from the animal's body, slowly extend the cut in a straight line from the genitals to the chin. The entrails and guts should spill out. (If the animal is not hung, roll it to remove the entrails.)

Remove and keep the kidneys and liver, which can be eaten. Check the liver for signs of disease, however – it should look smooth and wet, and purple or dark red in colour. If it looks mottled or spotted, discharge this part of the body, although the rest of the animal can still be eaten if it is thoroughly boiled. Open the chest cavity by splitting it apart, revealing the heart, lungs and windpipe. The heart should be saved as it can also be eaten (as can the lungs in survival situations, although they have little nutritional value). Remove as much of the windpipe as you can.

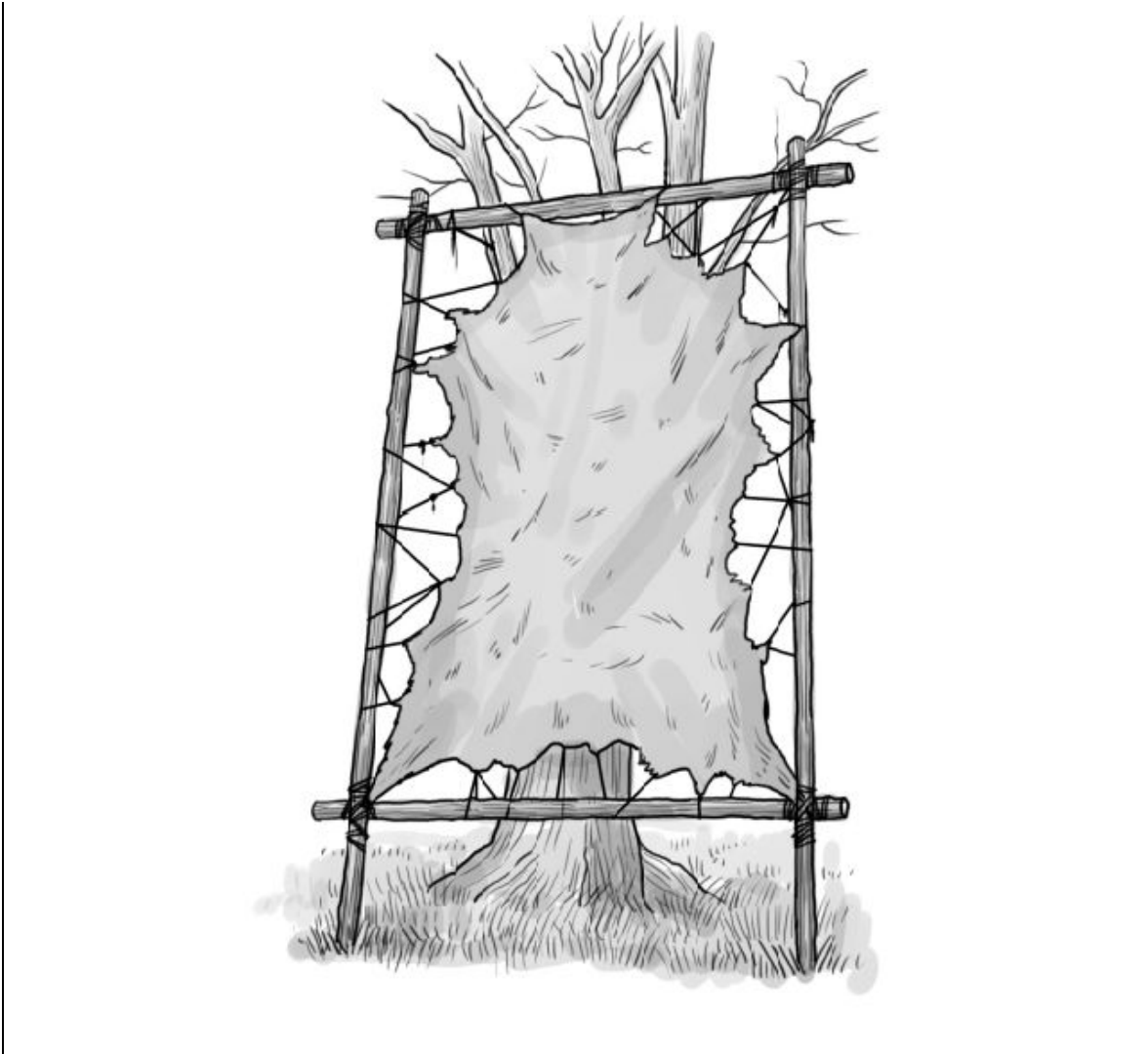
Gutting a Deer

Gutting a deer properly takes time and practice. Sharpen your knife to a razor edge before starting the process.



Drying a Skin

Once an animal skin has been scraped of its fatty deposits, it can be stretched out on a frame like this one to air dry.



Skinning

The bled and gutted carcass can remain hung, or you could remove it from its frame and lay it down, belly facing upwards. If you skin the animal shortly after it has been bled, it will still be warm, which makes the process easier. Extend the cut down the belly by cutting away from the genital area along the inside of the forelegs, then begin working the skin away from the carcass using the knife as little as possible. You should be able to separate skin from flesh using your fingers, rolling it outwards. Work from the rear of the animal to the head, cutting off the lower legs at the knee joint to remove the skin in one piece. When removing the head – just as for the legs – never cut towards yourself. With smaller animals such as rabbits, the process is relatively straightforward; with larger animals, it is much easier with two people.

If you are hunting alone, do not forget that you will be responsible for moving and preparing any animals you kill. Even a small muntjac deer can weigh upwards of 18kg (40lb) when fully grown. While that may not sound too heavy, bear in mind that you will also be carrying equipment and a weapon, and may have some distance to travel. If there are two or more of you, a convenient way of carrying any sizable kill is to tether it to a sturdy branch with rope, and carry the load on your shoulders.

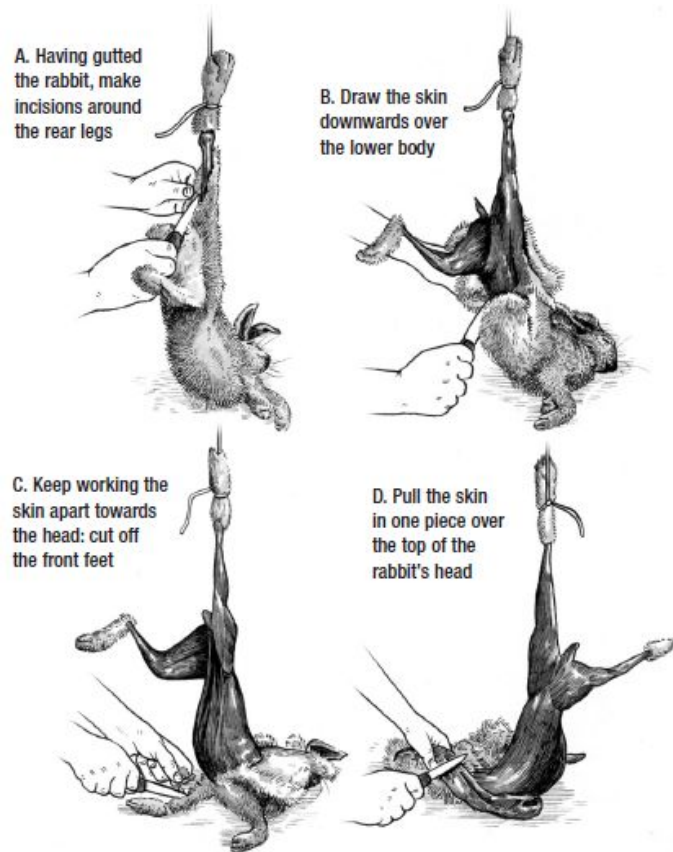
Jointing

Large animals, such as deer or cows, should be quartered first to make cooking them more manageable. Split the carcass into two down the backbone, then cut each side between the 10th and 11th, or 11th and 12th ribs. The more tender meat is to be found on the hindquarters, with the tougher meat found at the forequarter. The tougher meat will require longer, slower cooking.

Apart from the offal, which should be eaten as soon as possible, the meat on a quartered carcass will be more flavourful and tender if it is hung for a few days. (This of course depends on the environment and situation. In very hot climates, for example, food can begin to rot within hours if not cooked or preserved.) Tough muscle fibres will begin to be broken down by acids. The hanging process also allows any bacteria in the meat to die. However, meat should only be hung in clean, cool conditions, so if you are camping and other animals or insects may get to your meat, you are better off preserving and storing it as soon as you can.

Skinning a Rabbit

There are several methods of skinning a rabbit. The one demonstrated here involves tying up up the back legs and peeling the skin downwards.



Tools

In addition to any weapons required to kill the animal, there are certain tools that make preparing a carcass much easier. These include:

- A large, very sharp hunting knife to cut through flesh, tendons and bone.
- A small, thin-bladed knife to skin the carcass.
- A sharp, pointed knife to cut meat and trim the carcass.
- A container for collecting and storing blood.
- Containers for edible offal and waste entrails.

In a survival situation, an alternative to a knife is a piece of sharp stone (split slate or flint is particularly good – see chapter 2) or pieces of discarded steel (such as tin lids), sharpened to an edge on a rock.

Making the Most of Your Kill

Aim to utilize as much of the animal as you can either for food or utility; hunting, killing and preparing an animal can expend a lot of time and energy, so you want to get as much use out of each kill as possible. It is vital that you do not expend more energy in hunting and preparing food than you gain from eating it, as this imbalanced equation will ultimately result in starvation. As well as meat, animals can provide:

- **Stock** from boiling up the feet, tail and bones (ensure these are clean before use).
- **Fat**, which is an excellent source of energy and can be used for cooking and adding to other foods or meals for flavour and nutrition.
- **Skins**, which can provide excellent clothing.
- **Bones** can also make strong, handy tools or weapons, if sharpened.
- **Tendons** and ligaments – once dried out, these can be used for lashings, bowstrings or even snare wire.

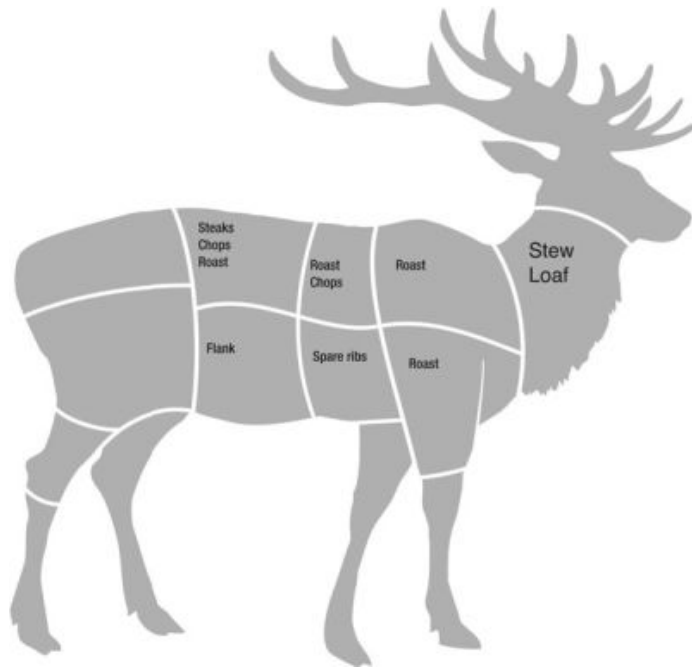
A word of warning – wild pigs can yield plentiful, delicious meat but they can often contain parasites. Boiling them thoroughly is the best way of killing them. If you kill an animal with any signs of infection (swollen neck, open sores, signs of weakness or disorientation), the same rule applies, although if you have the choice, such creatures are best avoided altogether. Take great care when handling raw meat and never allow the animal's blood to enter an open wound on your body.

Birds

The same basic principles apply to preparing birds as they do for animals. Bleed the bird first, and then pluck soon after bleeding. Submerging the bird in hot water will loosen the feathers and make them easier to pluck, except for water and seabirds, where this will tighten them. Start plucking from the chest, using a swift snapping motion. Next, gut the bird, cutting from the neck to the tail. Remove and discard the innards, apart from the heart, liver and kidneys, and cut off the head and feet. Younger birds can be roasted, but older or larger birds will be tenderer if you boil them. Carrion birds, which often carry infection or diseases, should also be boiled. Feathers can be kept for providing insulation or making arrow flights and fish hooks.

Joints of Meat

This illustration depicts the types of meat that can be obtained from a deer, with proper butchery. The rump provides some of the thickest pieces of meat.



Animal part	Information
Liver	An excellent source of micronutrients, the liver should be eaten as soon as possible. Avoid eating if it is mottled or covered in white spots. It can be eaten raw or fried quickly.
Kidneys	Kidneys are very nutritious. Eat them quickly, cooking them with herbs or adding them to soups or stews.
Heart	Roast the heart or add it to stews. Eat it soon after the animal is killed.
Stomach (tripe)	A delicacy in some European countries, tripe should be cooked with herbs. Eat it soon after the animal is killed.
Tail, feet, bones and head	Boil these up for stock, which can be used for soups, stews or even as a nutritious drink. The cheeks and tongue can both be eaten, but remove the tongue's skin first.
Fast-cooked meat	Cuts from the hind, such as fillet, sirloin and rump steaks, can be preserved to eat after stocks of offal have gone. They require little cooking and can also be dried in strips.
Slow-cooked meat	Forequarter meat is tougher and benefits from slower cooking. It includes leg meat, such as topside, silverside and shin, flank or brisket from the belly, neck, chuck or rib meat.

Fish

Fish are an excellent source of protein, vitamins and essential fats. All freshwater fish are edible; if you are fishing in tropical waters, however, use an identification guide to make sure you have not caught a poisonous species. When you have caught your fish, bleed and gut it as soon as you can, accessing the innards by cutting from the tail to throat. However, fish under 5cm (2in) long do not need to be bled or gutted, and can be eaten whole. Fish can be cooked with their scales left on, but as the skin is a good source of nutrition, de-scaling makes it more accessible.

Cut off the fins, tail and head. Bones and ribs can be removed, but this is often easier after cooking, as it reduces the amount of meat wasted in preparation. Note that fish goes off quickly and can be dangerous if it spoils, so prepare it as soon as possible after catching. Never eat dead fish that you find floating on the water's surface – they may be diseased, and you do not know how long they have been there.

US Army Tip: Avoiding Unsafe Fish

Do not eat fish that appears spoiled. Cooking does not ensure that spoiled fish will be edible. Signs of spoilage include:

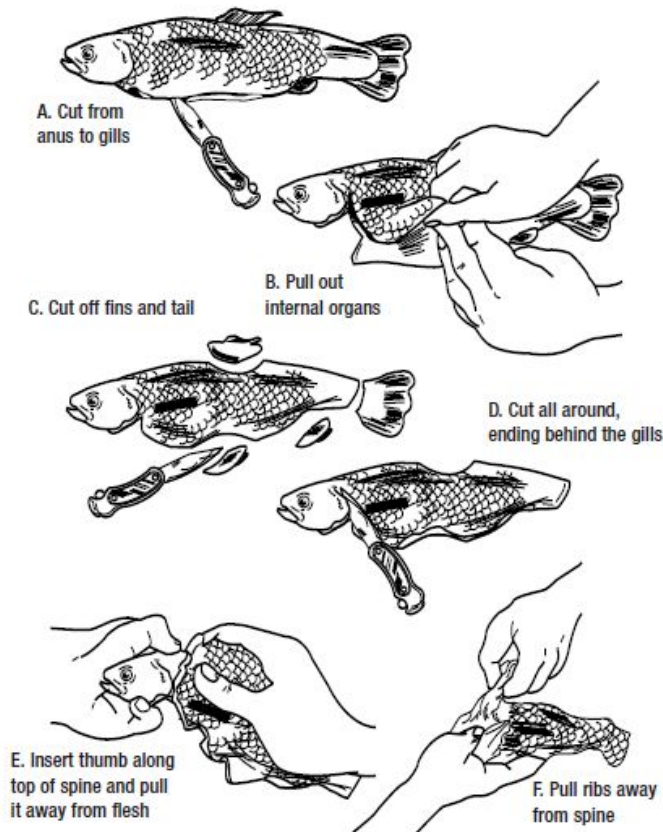
- Sunken eyes.
- Peculiar odour.
- Suspicious colour. (Gills should be red to pink. Scales should be a pronounced shade of grey, not faded.)
- Dents stay in the fish's flesh after pressing it with your thumb.
- Slimy, rather than moist or wet body.
- Sharp or peppery taste.

Eating spoiled or rotten fish may cause diarrhoea, nausea, cramps, vomiting, itching, paralysis or a metallic taste in the mouth. These symptoms appear suddenly, one to six hours after eating. Induce vomiting if symptoms appear.

– US Army, FM 21-76, *Survival*, p.95

Gutting and Filleting Fish

For gutting and filleting fish, your knife should ideally be a thin-bladed type, as used by proper fishmongers.



With animals, birds and fish, rinse down the carcass after bleeding and gutting to remove any dirt or debris.

Cooking

Returning to camp and cooking your kill is one of the undeniable pleasures of the outdoor experience. As well as producing mouth-watering, nutritious food, cooking your meat or fish makes it more edible, kills bacteria or poisons and softens tough muscle fibres. You can also forage for plants, herbs, fruits and vegetables to make delicious, rounded meals that contain all essential nutrition.

Fire Cooking

An extremely simple method of cooking meat involves cutting into cubes and roasting it over open flames on wooden skewers.



Each method of outdoors cooking requires some sort of fire, for which you will need tinder, kindling and fuel. Tinder is any sort of dry material that can be easily ignited, such as wood, straw, grass or paper. It sets fire to the kindling, which has a higher combustible point and increases the temperature of the fire. Kindling includes dry twigs and wood soaked in flammable substances. To this, fuel is added to keep the fire burning. The best kind of fuel is wood, as it burns more slowly than grass or moss. Ensure that you have plenty of (ideally dry) fuel, and keep adding it to ensure the fire does not go out. Consider the spot for your fire carefully; you need to keep a reasonable distance from any overhanging foliage or ignitable materials, as well as your shelter.

Hobo Stove

The hobo stove is a classic special forces method of improvised cooking. As well as cutting an opening in the side of the can for making the fire, cut multiple vents around the bottom to ensure air flow.

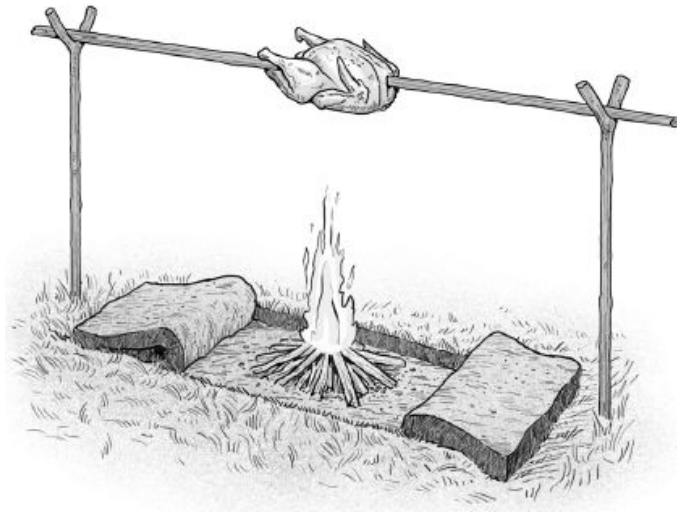


Methods of cooking

Most types of cooking can be carried out in the wild, including boiling, frying, roasting, grilling and baking. As a general rule of thumb, fish is cooked when the flesh starts flaking apart and meat is cooked when the juices from it run clear when it is poked with a skewer in the fattest part. Err on the side of caution – if you are not sure if something is completely cooked, continue to cook it until you feel sure it is safe to eat.

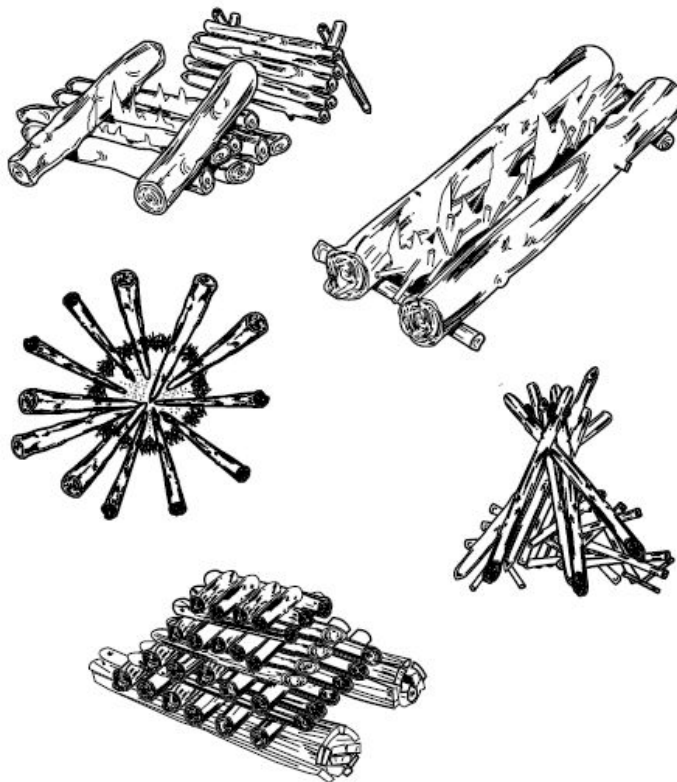
Trench Fire

In this simple version of a trench fire, the turf is cut back to provide a recessed platform for the fire, which cooks a chicken on a spit.



Types of Fire

There are numerous configurations of campfire, but remember that the more air you allow to the flames, the quicker the fire will burn.



US Army Tips: Types of Fire

Tepee – to make this fire, arrange the tinder and a few sticks of kindling in the shape of a tepee or cone. Light the centre. As the tepee burns, the outside logs will fall inward, feeding the fire. This type of fire burns well even with wet wood.

Lean-to – to lay this fire, push a green stick into the ground at a 30 degree angle. Point the end of the stick in the direction of the wind. Place some tinder deep under this lean-to stick. Lean pieces of kindling against the lean-to stick. Light the tinder. As the kindling catches fire from the tinder, add more kindling.

Cross-ditch – to use this method, scratch a cross about 30cm (12in) in size in the ground. Dig the cross 7.5cm (3in) deep. Put a large wad of tinder in the middle of the cross. Build a kindling pyramid above the tinder. The shallow ditch allows air to sweep under the tinder to provide a draft.

– US Army, FM 21-76, *Survival*, p.67

Boiling

Boiling is one of the safest methods of cooking meat or fish, as it reduces the risk of disease being passed on during digestion. The meat is also cooked evenly, unlike frying or roasting, which can result in raw areas if the meat is not carefully watched and turned. Boil meat or fish in a metal container if you have one, suspended over a fire. You can also boil water by dropping red-hot coals from the fire into it, and replacing these with hot rocks when they begin to cool, to keep raising the temperature. A boiling pot can be made in the ground by scooping out a hole, lining it with a waterproof material, such as leaves, filling it with water, then adding the hot coals. Keep any vessel covered during the boiling process if possible, to retain the heat and reduce the time it takes to reach a boil.

Pan Support

Two substantial rocks and a strong branch are all you need to make a support for a cooking pot over your campfire.



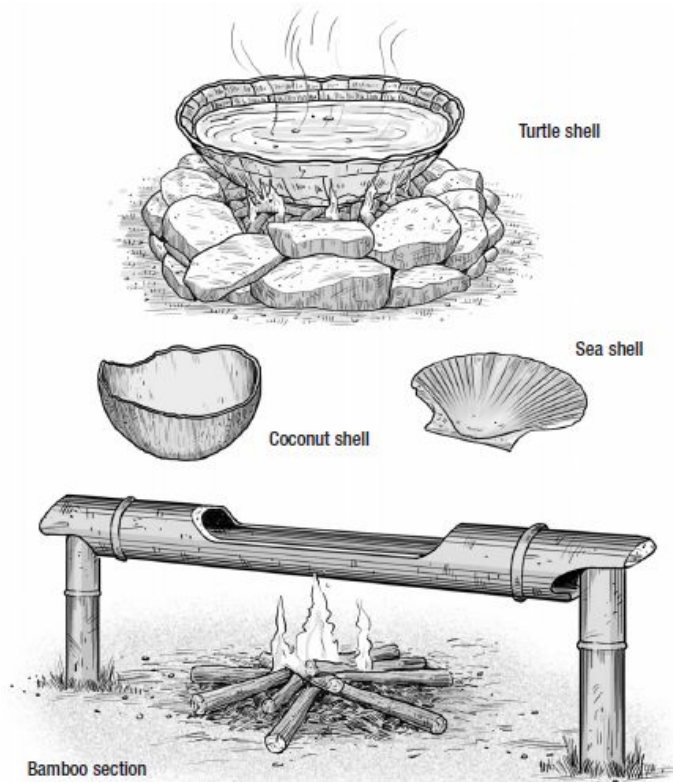
Stews can be made in the same way, but take care that the temperature has been brought high enough to kill any parasites in the meat before you lower the temperature to simmering point. Stews or soups can then be left for several hours, leaving you free to forage for other food sources.

Frying

A frying pan or skillet provides you with a ready means for cooking food quickly. Thin strips of meat are best when fried, because the outside of the meat can cook very quickly, but if the meat is too thick, the inside may still be raw. While this might be the best way to cook steak at home, out in the wild your priority is to ensure that your meat is safe to eat. (You can also cook eggs in this way, which can be collected from nests. However, you should avoid returning to the same nest over and over again.) Flat, narrow rocks or pieces of resilient metal can be used as skillets if you have nothing else available, but just ensure that you clean them thoroughly first.

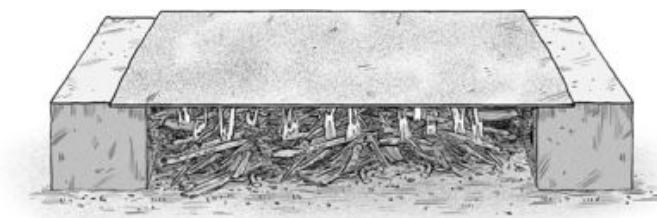
Boiling Methods

Various kinds of natural containers can be adapted for boiling food, including turtle shells, coconut shells, sea shells and a section of bamboo hollowed out and suspended across two uprights.



Grill Plate

You can use a sheet of clean steel or iron to make a broad grill plate over an open fire. This system is practical when cooking for large numbers of people, but clean the sheet thoroughly before use.



Roasting

Roasting is a good method of cooking whole birds or smaller animals such as rabbits. It is also simple to do outdoors, requiring nothing more than a skewer or spit that can be fashioned out of long, thin pieces of wood if you do not have metal ones. Just make sure that you keep the wood wet so that it does not catch fire. Turn your spit regularly to make sure the meat cooks evenly, and do not let the meat get too close to the open fire.

Grilling

A simple fire lit in a hole dug in the ground, then covered with a grid of thin green branches or poles, can be used to grill meat or fish, which are placed on the grid above the fire. This is an effective way of cooking fish, chops or steaks. Make sure that the hole has a bigger circumference than whatever you are cooking, at least 1ft (30cm) deep.

Cooking on Hot Rocks

This method of cooking is a gentle one for fish, and acts like a version of barbecuing. Let the flames die down before exposing the rocks.



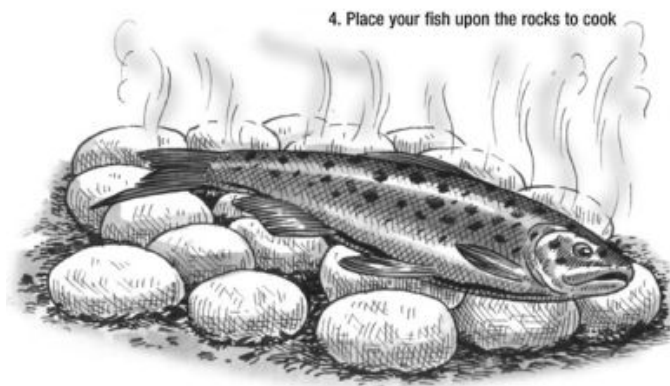
1. Make a pile of rocks



3. When the fire dies down, brush away the embers



2. Build a fire upon the rocks



4. Place your fish upon the rocks to cook

Baking

Baking is especially good for cooking fish and small animals. It is a slower, gentler method than roasting or frying, and cooks the meat evenly. A simple way to bake something is to wrap the filleted meat or fish in layers of green leaves, then secure them with cordage. Next, cover the parcel with a thick layer of mud (mud with a clay-like texture is best, as it will stick together). Pack the mud down tightly to hold in the juices and then place the parcel in the fire. Leave it there for at least 15 minutes.

If you have the time and resources, an oven can be made from rocks and mud if you have no other equipment. If you intend to stay in the same spot for any length of time, you could construct a hobo stove, Yukon stove or rock oven.

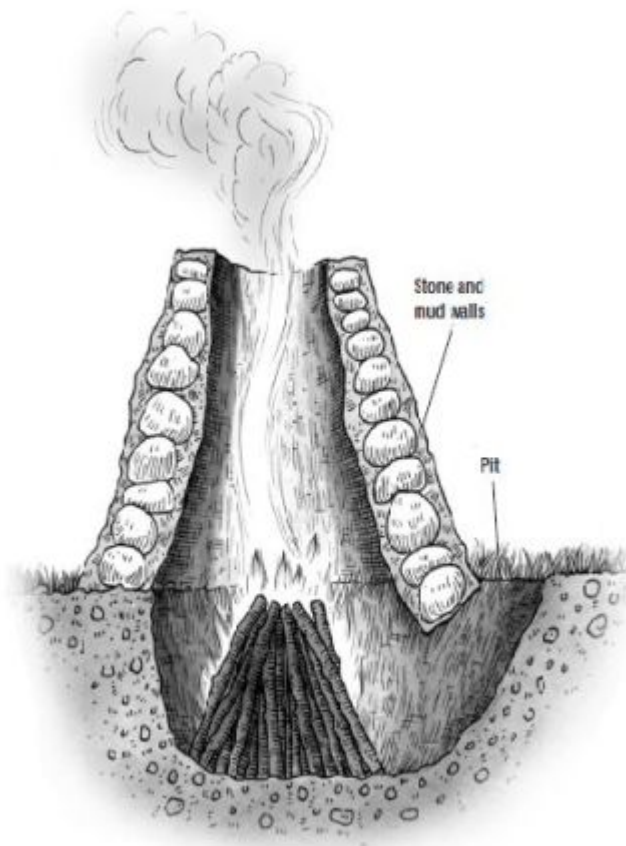
Rock Oven

A rock oven takes time to construct, but once it is up, it offers a virtually weather-proof system for roasting.



Yukon Stove

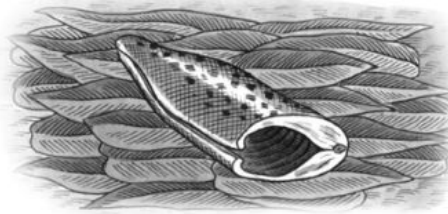
The Yukon Stove is superb for roasting meats. By altering the width of the channel leading down to the pit, you can control the temperature of the fire (the more open the channel, the hotter the fire).



Baking in Mud

Mud baking is a very gentle form of cooking, and is particularly suited to cooking fish without charring the meat.

A. Lay prepared fish on leaves



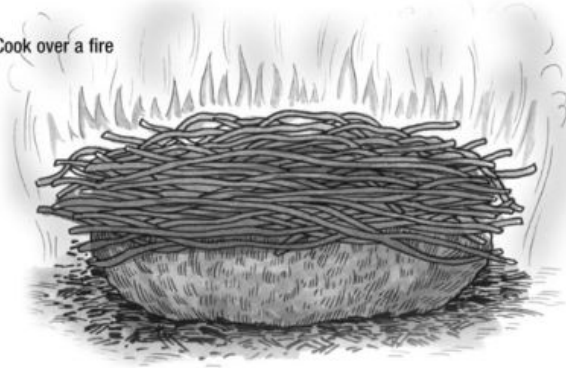
B. Wrap in plant material, tying with twine



C. Cover in mud



D. Cook over a fire



A hobo stove does require that you have a large metal tin or drum that has been thoroughly cleaned, with a hole in the side through which you can stuff kindling and fuel to make the fire. There also need to be several holes around the bottom of the

stove for ventilation. When you have a fire going, you can cook food on the flat top of the tin or drum.

The Yukon stove requires more effort to build, but it is an excellent way to roast, fry and even smoke food. It can also be a useful source of heat and can be built from materials found outdoors. First dig a hole in the ground at least 30cm (1ft) deep and 24cm (9in) in circumference, then build up a funnel shape above the hole. Use rocks packed with clay on the inside and outside to create a relatively smooth, stable funnel that gets narrower at the top. Leave a hole in the top for smoke to escape and through which to insert food.

Type of stove	Notes
Canister stove	Runs off pressurized gas canisters. Convenient, compact and clean, but with poor performance in very cold weather.
Liquid fuel stove	Runs off liquid fuel; often requires manual priming before use. Good cold-weather performance.
Multifuel stove	Runs off multiple fuel types, including white gas, unleaded petrol, kerosene, jet fuel and diesel. It is a good stove for use in international travel.

You also need to leave a channel from the base of your stove into the pit, where you can feed and stoke the fire. Cook your food over the opening on skewers or a grid, or roast in it by wrapping it in several layers of green leaves and inserting it inside the fire channel (but out of the flames).

Rock ovens are an excellent way to roast meat or fish. Start by making a hole (similar to the one used for making a Yukon stove) in which to lay your fire. Build up a structure of rocks around the hole, leaving a space through which to stoke and feed the fire, and insert the food.

You also need to leave a vent at the top of the rock structure to release smoke. The space at the front can be blocked off with rocks to increase the temperature inside the oven.

Food Preservation

The most effective way to preserve food is by keeping it cool. The sooner you get your meat into a fridge or freezer, the longer it will last. A fridge will keep meat fresh for

days, especially if it is kept dry and in an airtight container, if possible. Under these conditions, the moisture and heat that bacteria need to multiply are absent, so the meat will stay fresher for longer. Conversely, if the meat is kept in warm, damp conditions and not wrapped properly, both mould and bacteria have optimum conditions in which to grow. The food will also attract insects and other birds and animals.

If you are able to freeze your meat it can last for many months, depending on what it is. The table opposite shows recommended storage times, so if you know your food is stored at a constant temperature of below 32°F (0°C), you could keep your meat in the freezer for longer periods. However, the longer it is stored, the more degradation of taste and quality you might experience. Aim to thaw your meat thoroughly, ideally in a fridge to prevent bacterial growth. (Joints of meat or poultry will need at least a day to defrost in the fridge.)

Product	Length of recommended storage
Steaks and chops	Four to six months
Ground beef, lamb or pork	Two to three months
Poultry (legs, thighs, wings)	Six to nine months
Oily fish (salmon, tuna)	Two to three months
White fish (cod, haddock)	Four to six months
Cooked meats	Two to three months

If you are in a cold climate, you can freeze your food by packing it in snow. Wrap it well first to avoid freezing burns to the meat and to decrease the likelihood of other animals being able to smell and trace the food, leading them directly to your camp. If the snow around the meat melts, the meat will start to defrost and will need to be eaten. Never re-freeze meat that has started to thaw.

If you have no access to a fridge or freezer, or if you want to go the whole hog and experience the full survival experience, you will need to consider other methods of preserving your meat.

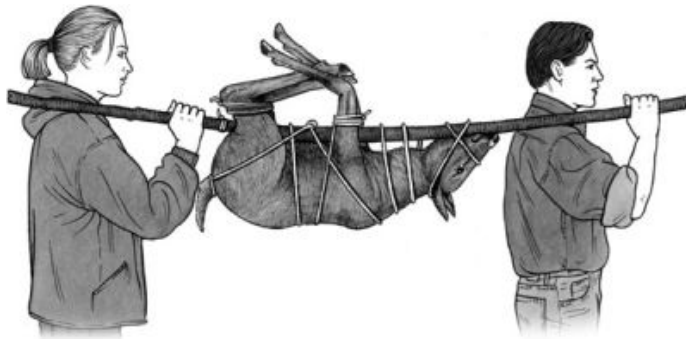
Drying

Drying out meat or fish is often the simplest way of preserving it outdoors. By reducing the water content of the meat, you are removing a source of bacteria and mould – they are unable to multiply as quickly, so your dried food lasts a lot longer than it would if left in its natural state.

It is best to use lean meat or fish for drying, such as white fish, poultry or non-fatty beef or venison. Fattier meats do not last as long when dried, as the fat will go rancid. Cut your meat or fish into small strips of a few centimetres thickness and length, slicing along the grain. Now simply place the meat in a location where it will dry out. Convenient places to lay or hang your meat include tree branches or rocks in direct sunlight. You could also make a wooden frame if you intend to try this method.

Carrying a Carcass

Animal carcasses can be heavy items to transport. A single pole support like this one at least means you can split the load between two people.



As simple as drying food sounds, you need to be careful that your meat or fish is not contaminated during the process. Unless you can control the sterility of the environment, your most time-consuming task will be to ensure that you keep insects, birds and animals away from your meat. As the drying process can take days, this is not always an effective use of your time. The end product should feel dry, crisp and stiff, looking almost desiccated. If it feels cool to the touch, the water content is still too high.

Animal skins can also be dried out using a similar method as drying meat to make rawhide. This air-dried product becomes a stiff material, which can be made pliable by working it or waterproofed by greasing it with animal fat. The hide can then be used for making shelters and insulation.

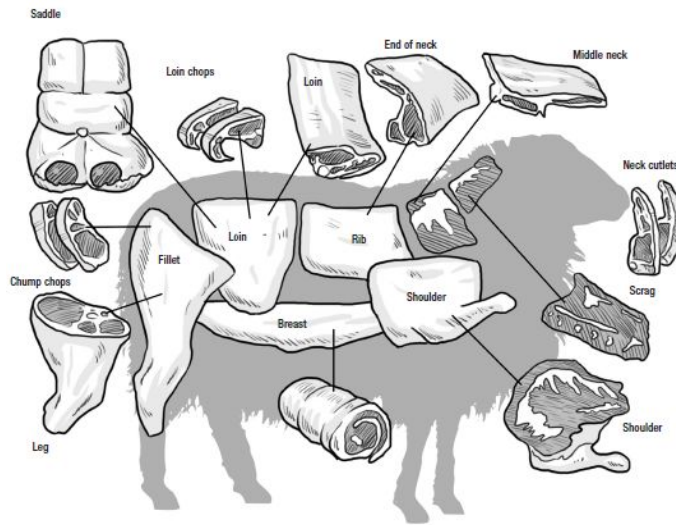
Smoking

Preserving your meat or fish by smoking it is a much faster alternative to air-drying. Smoking works by the effect of smoke drawing moisture from the meat. It originated as a method of food preservation in prehistoric times; cave dwellers would build fires in their caves (which had no chimneys) and leave meat exposed to the smoke to dry.

The smoke enhances the flavour of the meat, adds an extra level of protection from bacteria and leaves a waxy coating on the food so that less moisture is absorbed. Smoking food has developed into a popular taste in many different cultures (often ones who originally used it as a preservation method).

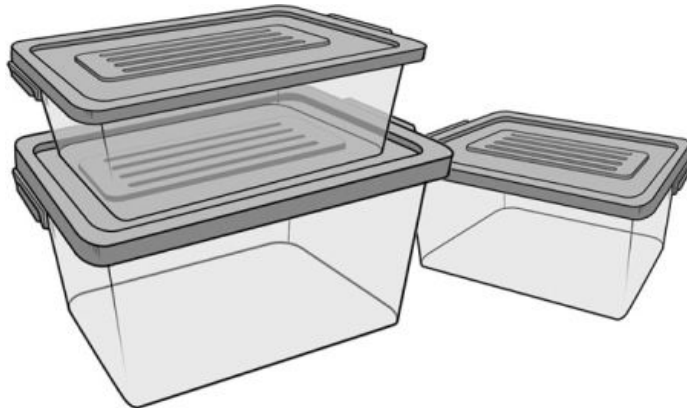
Cuts of Lamb

Sheep provide some of the best meat of any animal. As this diagram illustrates, careful butchery is central to maximizing the carcass.



Storage

Air-tight plastic boxes are cheap and practical ways of food storage, particularly on fresh foods. For freezing, also wrap meats tightly in plastic storage bags, removing as much air as possible.



Smoking Frame

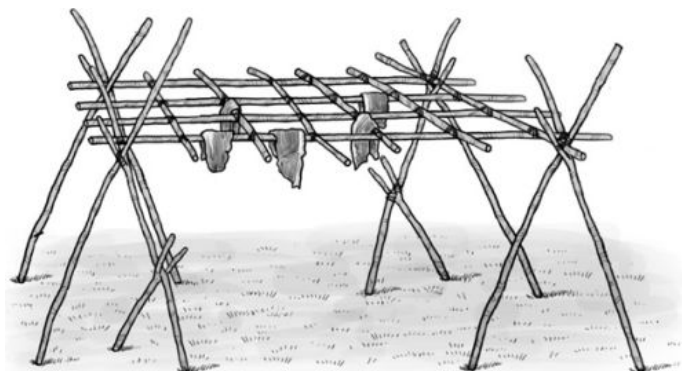
The simplest way to try smoking is to use a frame similar to the drying frame illustrated. The frame needs to be placed near to or over a fire, so that the meat is not getting hot enough to cook but is able to absorb the smoke. Using green branches and leaves as fuel for your fire produces more smoke and means that your fire won't get hot enough to scorch the food. Hardwoods produce good smoke; if the wood is very dry, it will burn easily and produce more heat, so soak the wood before placing it on the fire for a very smoky flame. If the meat starts to get too hot, move the frame away until it cools. Resinous woods, such as conifer, should be avoided, as they will ruin the flavour of the meat.

Tepee Frame

A teepee frame is another useful structure for smoking food. It can be made quite easily with three long, thin branches, which are tethered together at the top to form a basic standing teepee shape. You will need further thin branches to form one or more grid-like platforms in the interior of the teepee, on which you should place layers of green leaves before topping them with your meat. Keep the pieces of meat quite small and thin as you did for drying, as they will smoke faster than large pieces, and ensure that they do not touch one another. Finally, cover the teepee with cloth, branches or animal hide to increase the smoke around the meat, leaving only a small vent for the fire.

Drying Frame

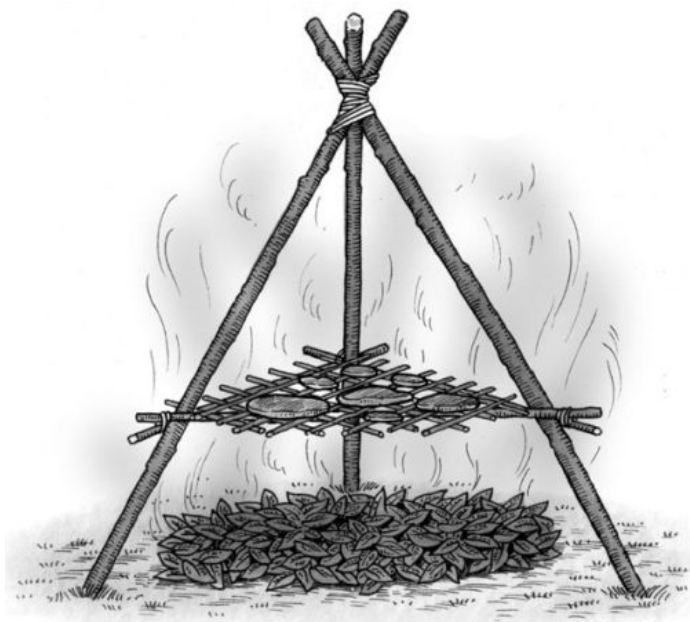
A drying frame is system for air-drying thin slices of meat. The frame presents the maximum surface areas of the meat to the air.



Leave the meat smoking in the teepee for one to two days, which will produce meat that will last for one to four weeks (the longer it smokes, the longer it will last). You will need to keep an eye on the fire during the smoking process to ensure that it does not get too hot and burn the meat. The pieces will curl up as they dry and look dark with a brittle texture. The smoked food will not need any further cooking. It can be eaten as it is, added to soups or stews or rehydrated by soaking it. Whichever method you try, make the most of the slow process by adding as much meat or fish as you can to the frame.

Smoking Frame

The smoking frame is used for smoke-drying foods. The meat is placed on a platform over a smoky fire; the smoke draws moisture from the food, dramatically increasing the shelf-life of the meat.



Brine or Salting

If your environment means that it is not safe or convenient to leave a fire burning for several hours, or even days, brining or salting your food is an alternative preservation technique. Seawater or salt water can be boiled to kill any bugs and to concentrate the brine solution (ideally, you want a 20 per cent salt solution). It should then be cooled before strips of meat or fish are added to soak. They should then be air-dried. Alternatively, packing meat or fish into salt will preserve it and can extend its life for up to four months.

The combination of drying meat out, as well as adding salt, means that bacteria have less chance of survival. The salt also slows oxidization, which turns meat and fish rancid. A mixture of brining or salting, as well as drying and/or smoking the meat, will result in the best-preserved foods. Salted foods can be soaked in water prior to eating to improve the flavour and texture, but they can also be eaten as they are.

Appendices: Survival Foods

Many US military training exercises now focus on survival in extreme environments, where food is either plentiful but unfamiliar or generally scarce. Troops can be sent to places like South Africa, Belize or Malaysia, where they had to re-engage with nature without the aid of the equipment and technology often relied upon by today's military. Part of the training includes tracking, hunting, killing and eating any food they can find, including reptiles and insects. If you do find yourself in a survival situation, do not discount these seemingly unpalatable foods from your diet.

Insects

Insects especially can be an excellent source of protein, and large quantities of insects can be caught far more easily than some birds or animals. Remember that in a survival situation you want to expend as little energy as possible, so spending several hours and a lot of energy and calories tracking, killing and preparing a larger animal may not actually be the best way to procure food. Grasshoppers, crickets and termites can be roasted or boiled to produce a very nutritious, if not very tasty, meal. Find them under rotting logs, stones or in grassy areas, and remove the wings, antennae and outer shell before cooking.

Snakes can also be roasted or boiled for a nutritious, high-protein meal. Ensure that their heads are removed, including any poison sacs, then gut in the same way as you would other game. Molluscs can be easily caught but need to be starved for at least 24 hours prior to eating so that any toxins are excreted. Cook by dropping them live into boiling water for 10 minutes.

With any insect, reptile or mollusc, take care not to go for anything deadly or poisonous. If you are at all unsure, leave it. As a basic rule, anything that is brightly coloured should be avoided, so stick to natural colours. Refer to an identification guide if you have one.

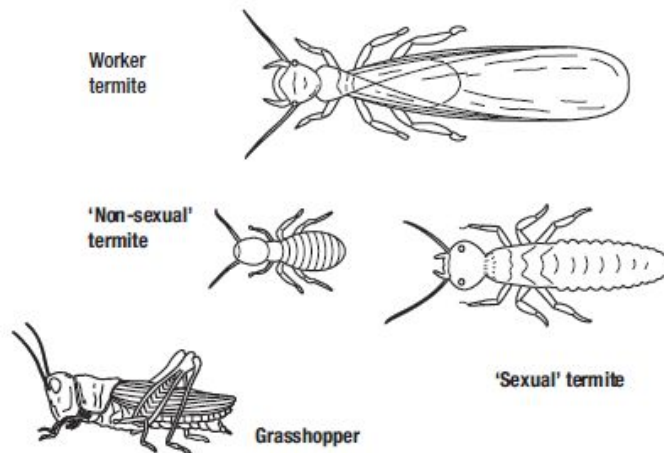
Enhancing Your Dish

If you are surviving outdoors for any prolonged period of time, you will need a balanced diet (made up of carbohydrates, proteins, fats and vitamins and minerals) to stay in peak physical condition. For this reason, supplement your meat dishes with fruit and vegetables. While many plants or roots can be eaten raw, most are much more palatable when cooked. Tubers or roots can be boiled, roasted with meats or

cooked in stews for a delicious, nutritious meal. Leaves and stems can be boiled or added to stews or soups. Drop berries into stews, or place root vegetables around meat when baking. Sliced vegetables can be fried alongside strips of meat, or they can be boiled until soft and edible.

Edible Insects

If times get desperate, many insects are edible, and contain surprisingly high amounts of protein. Remove wings and legs before consuming.



Naturally, take care when foraging for plants, fruits, fungi or herbs, as nature is replete with poisonous species. Some of the most common edible plants include:

- Acacia
- Asparagus
- Bananas
- Blackberries
- Blueberries
- Cactus
- Chestnut
- Chicory
- Dandelion
- Date palm
- Nettle
- Palms
- Persimmon
- Plantain
- Prickly pear cactus
- Sheep sorrel

- Strawberries
- Taro
- Thistle
- Water lily and lotus
- Wild onion and garlic

Collecting Termites

One method of collecting termites is to push a long stick into a termite mound. The insects clamp onto the stick with their strong jaws, and can then be scraped off the stick into a container.





If you are not able to identify what you are eating, carry out the Universal Edibility Test (UET) beforehand to check whether or not it is safe, discarding anything that produces a reaction.

Universal Edibility Test

- Avoid eating, if possible, for eight hours before the test to guarantee the accuracy of the results, and during the test drink only water and eat only the plant sample.
- Divide the plant into its basic constituents – leaves, stems, roots and so on – and test only one part of the plant at a time.
- Smell the plant for strong acid or almond-like scents, and crush some of the plant to release potentially hidden smells. If you detect unpleasant smells, reject the plant.
- Rub a sample of the plant on the inside of your elbow or wrist. Wait 15 minutes to see if there is any adverse reaction, such as blistering or irritation.
- If there is no skin reaction, place a small piece of the plant on the outer surface of the lip to test for burning or itching. Leave for three minutes.
- Put the piece of plant onto your tongue and hold it there for 15 minutes without chewing.
- Now chew the material, but do not swallow. Hold the chewed plant in your mouth for another 15 minutes.
- Swallow the food and wait for eight hours. Should you start to feel ill, induce vomiting and drink plenty of water. If there is no adverse reaction, eat a handful of

the plant and wait another eight hours. If there is no sign of illness, the plant is safe to eat when prepared in the same manner as during the test.

As well as performing the UET, there are a number of other rules to follow for acquiring plant foods, although these are more negative:

Plants to Avoid Eating

- Any type of bulb.
- White and yellow berries. About half of red berries are safe, so eat only if you can make a positive identification.
- Red plants.
- Overripe fruit.
- Fruit marred by mildew or fungus.
- Any plant with an almond-like scent, indicating a cyanide compound (crush up some of the leaves to release the smell).
- Plants with a white, milky sap, unless you know the plant is safe (such as dandelion).
- Five-segmented fruits.
- Plants with a three-leaved structures.
- Uncooked legumes (beans and peas). These absorb minerals from the soil and can cause digestive problems.
- Plants with tiny barbed hairs on the stem and leaves; these can be laced with irritant chemicals.
- Any plant that irritates the skin on contact.
- Any dead or diseased plant.
- Plants with umbrella-shaped flowers, although carrots, celery and parsley (all edible) are members of this family.

Fungi are an excellent source of vitamins, minerals and proteins, and make a great addition to stews, but they can be very dangerous. They can remain poisonous even after cooking, and even the UET may not work, as some fungi contain poisons that only take effect after prolonged periods of time. If there is any doubt, never eat fungi found growing outdoors.

Preparing and cooking your food in a survival situation are not just essential safety procedures; they also serve as a morale boost, making you feel a greater sense of control over your environment, and provide you with the natural comfort of a warming and nutritious meal.

US Army Tip: Eating Seaweed

One plant you should never overlook is seaweed. It is a form of marine algae found on or near ocean shores. There are also some edible freshwater varieties. Seaweed is a valuable source of iodine, other minerals and vitamin C. Large quantities of seaweed in an unaccustomed stomach can produce a severe laxative effect. When gathering seaweeds for food, find living plants attached to rocks or floating free. Seaweed washed onshore for any length of time may be spoiled or decayed. You can dry freshly harvested seaweeds for later use. Its preparation for eating depends on the type of seaweed. You can dry thin and tender varieties in the sun or over a fire until crisp. Crush and add these to soups or broths. Boil thick, leathery seaweeds for a short time to soften them. Eat them as a vegetable or with other foods. You can eat some varieties raw after testing for edibility.

– US Army, FM 21-76, *Survival*

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